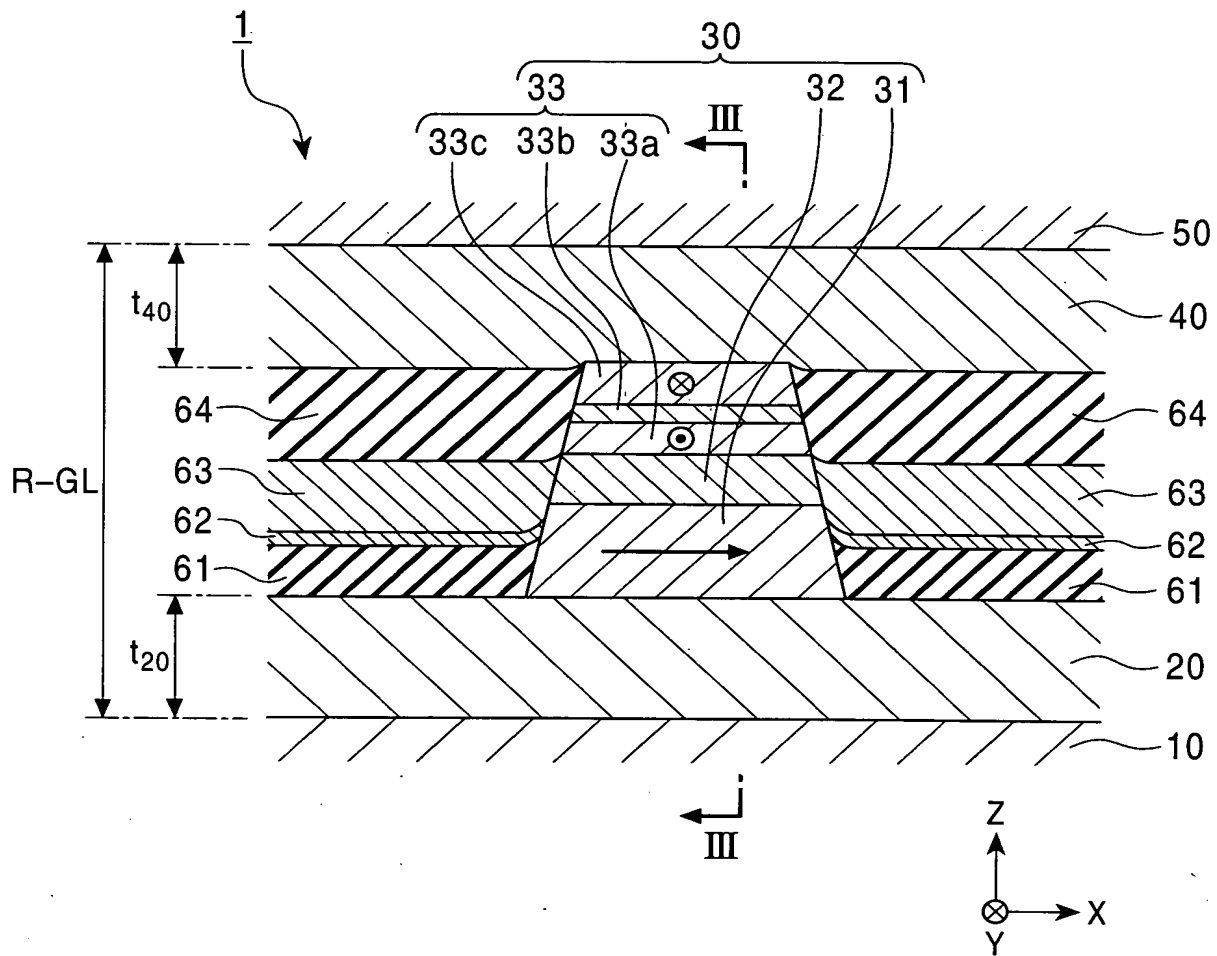


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FIG. 1



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FIG. 2

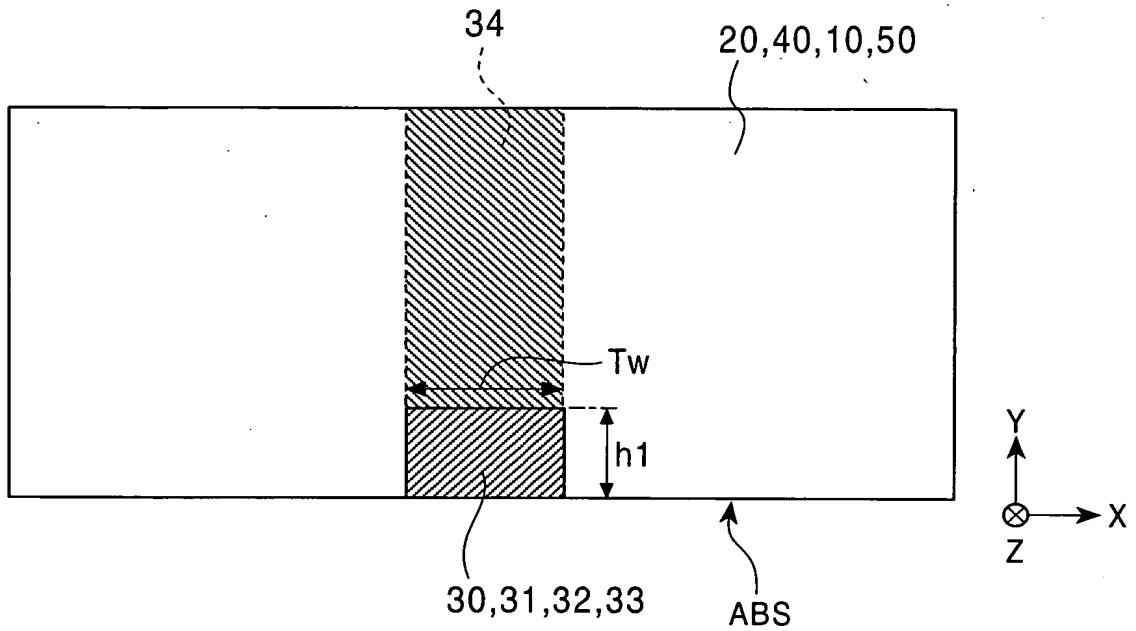
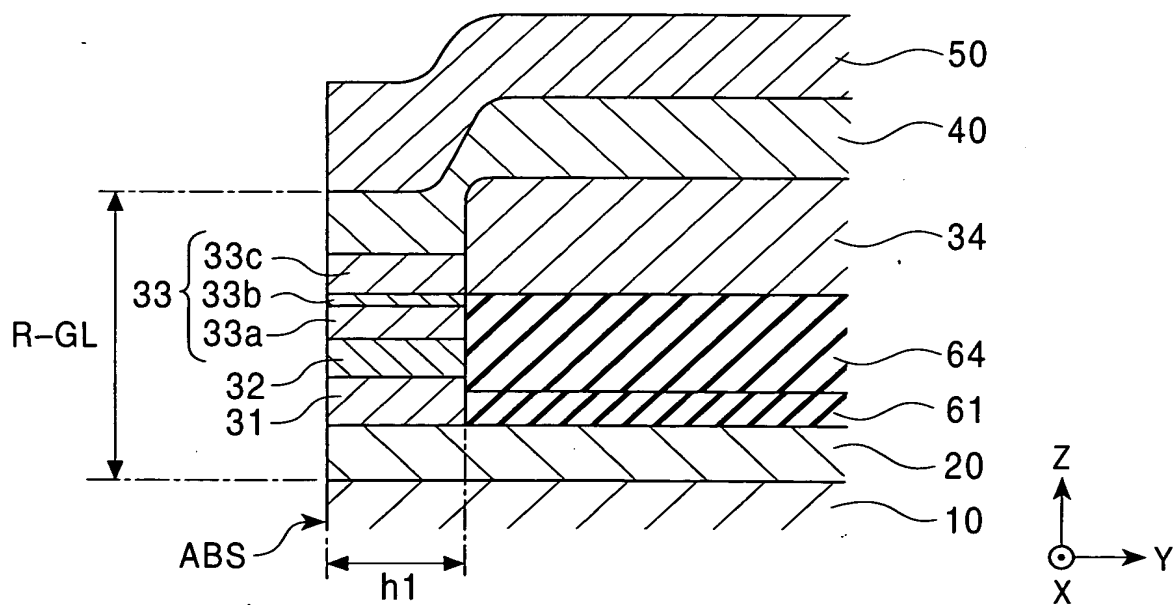


FIG. 3



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FIG. 4

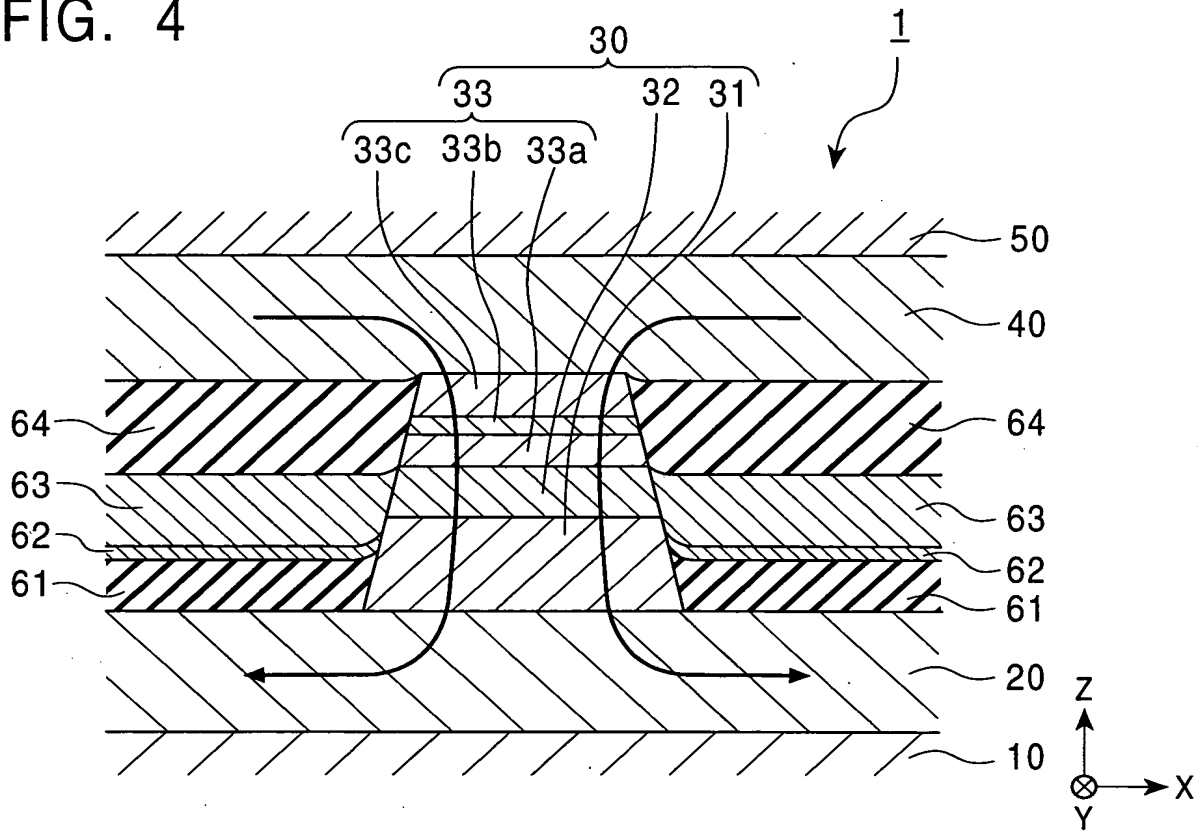


FIG. 5

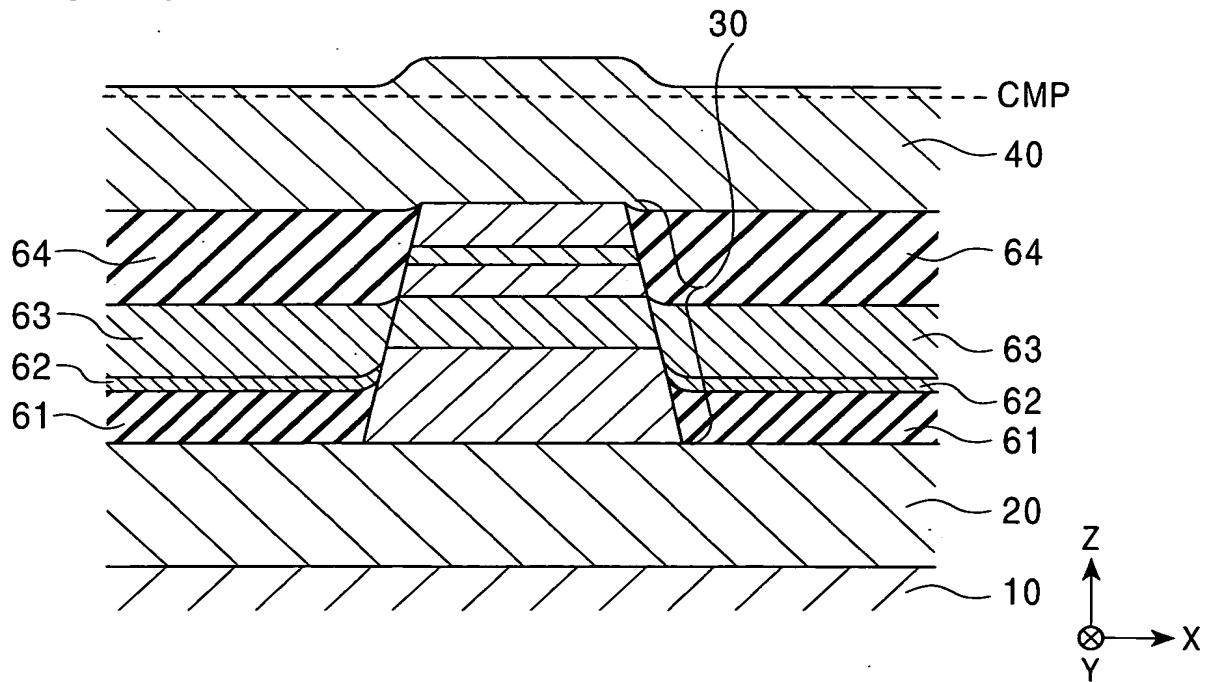
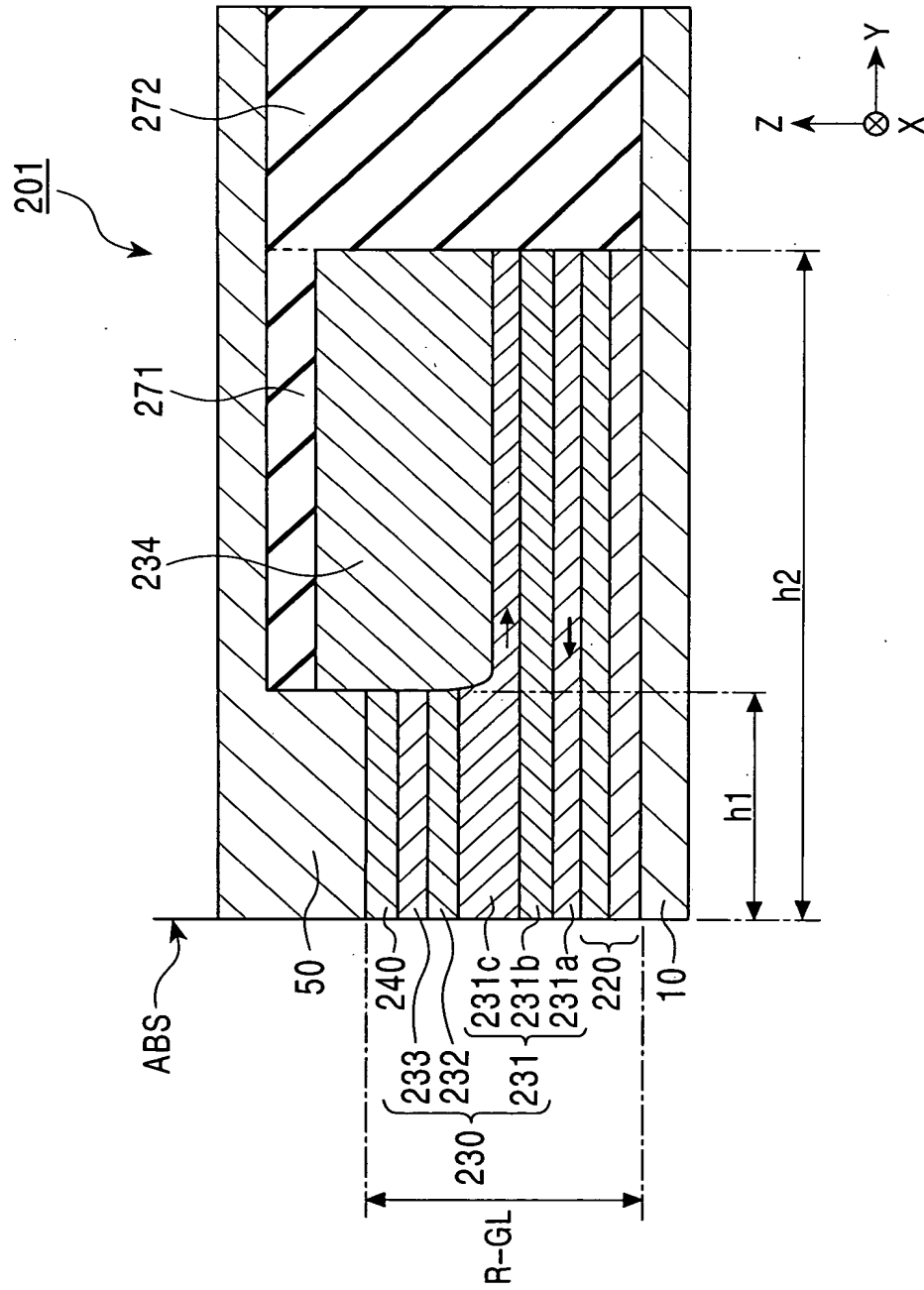


FIG. 6



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FIG. 7

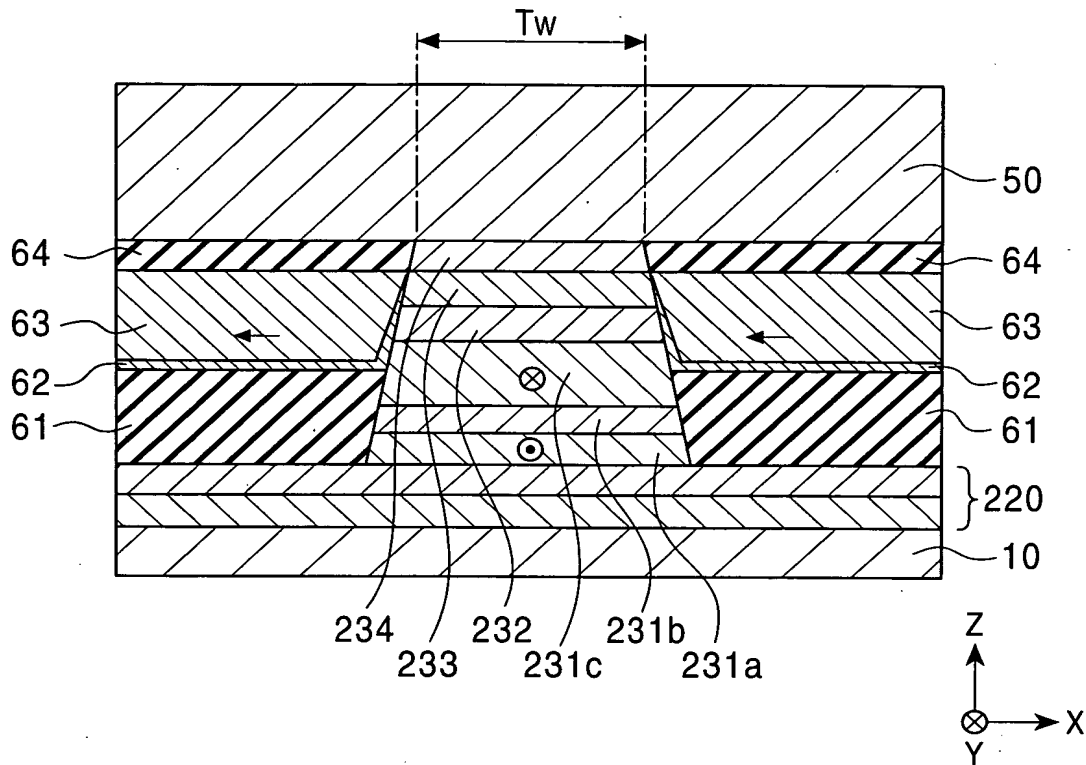
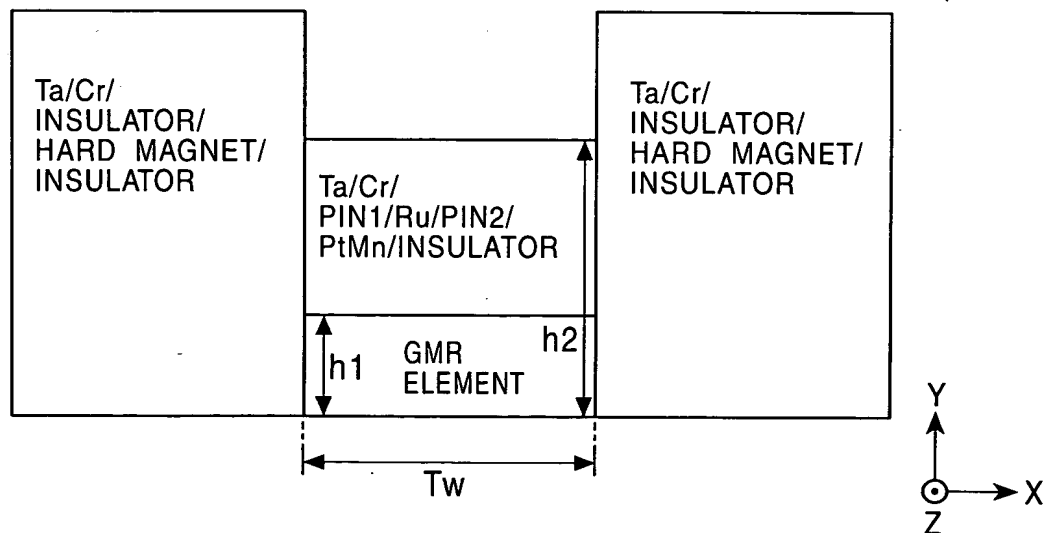


FIG. 8



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FIG. 9A

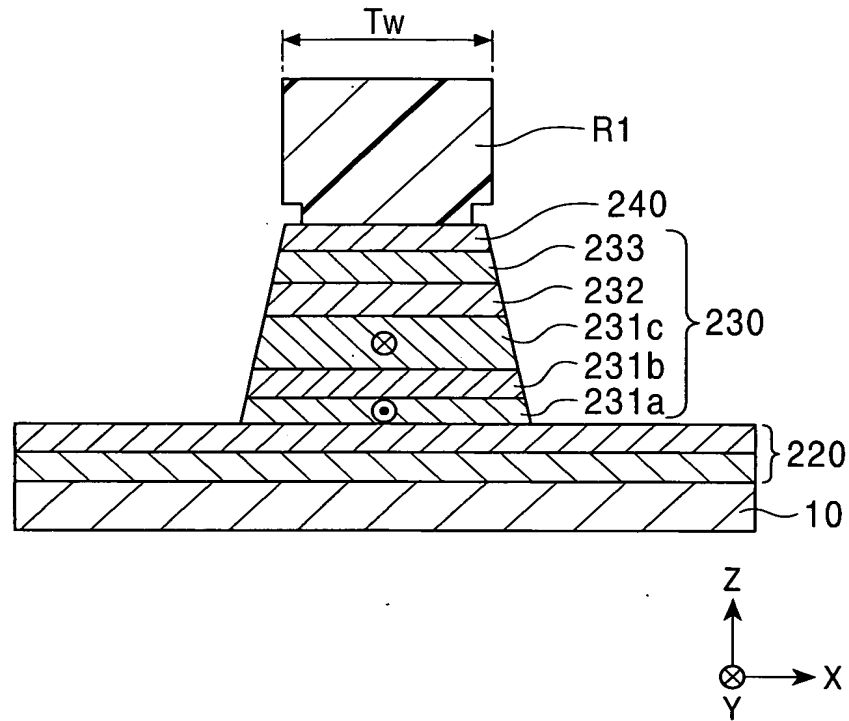
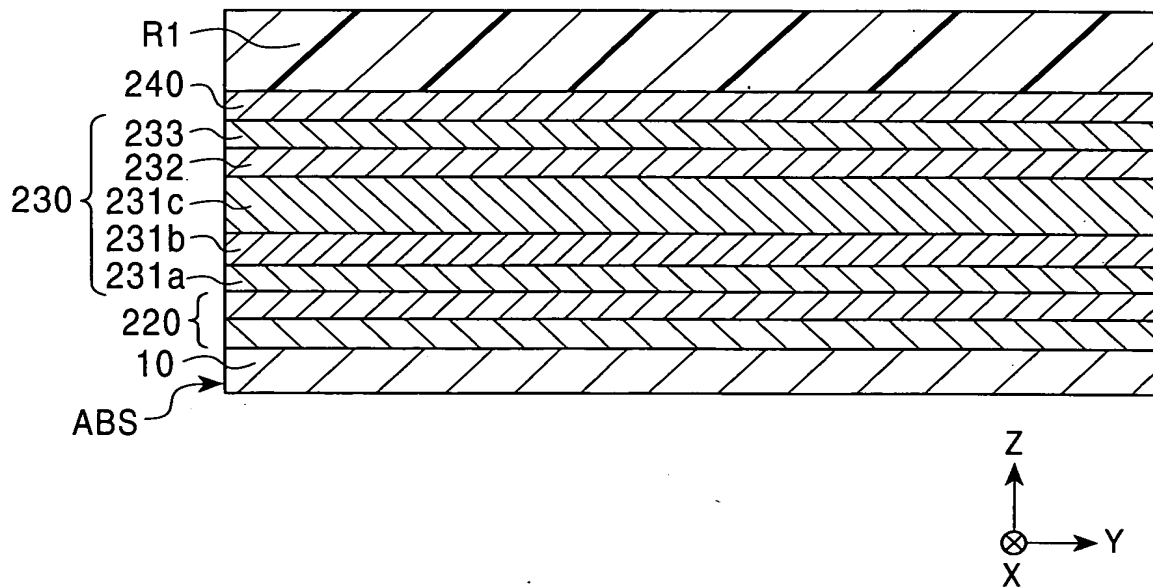


FIG. 9B



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FIG. 10A

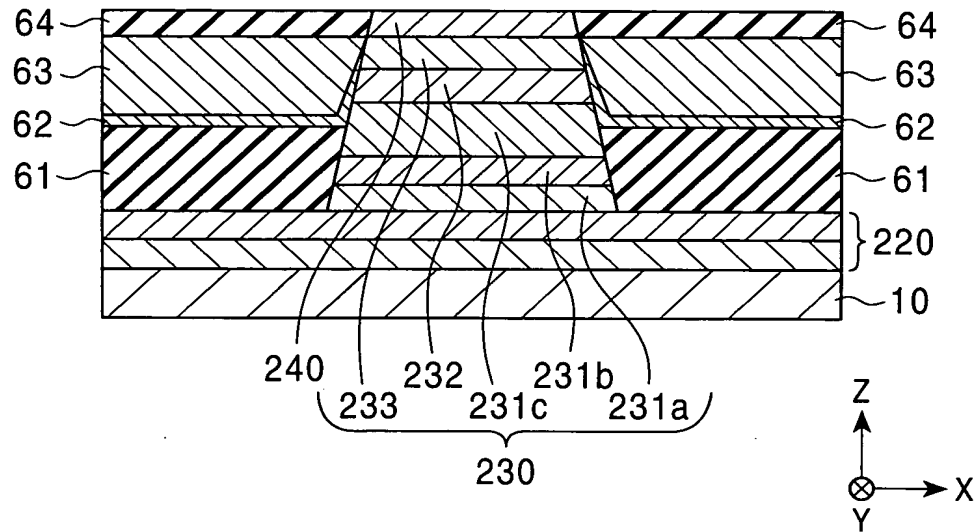
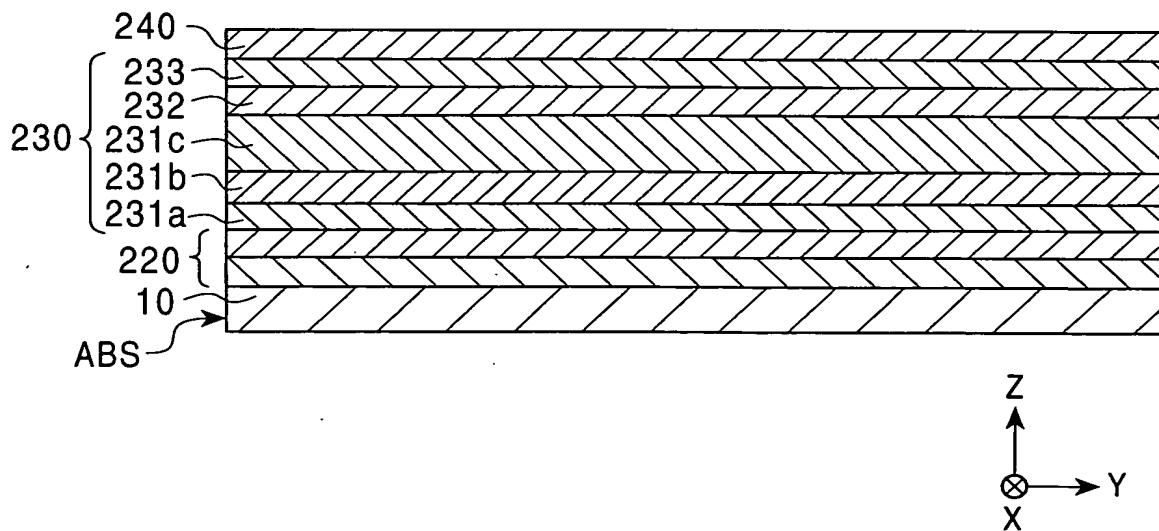


FIG. 10B



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FIG. 11A

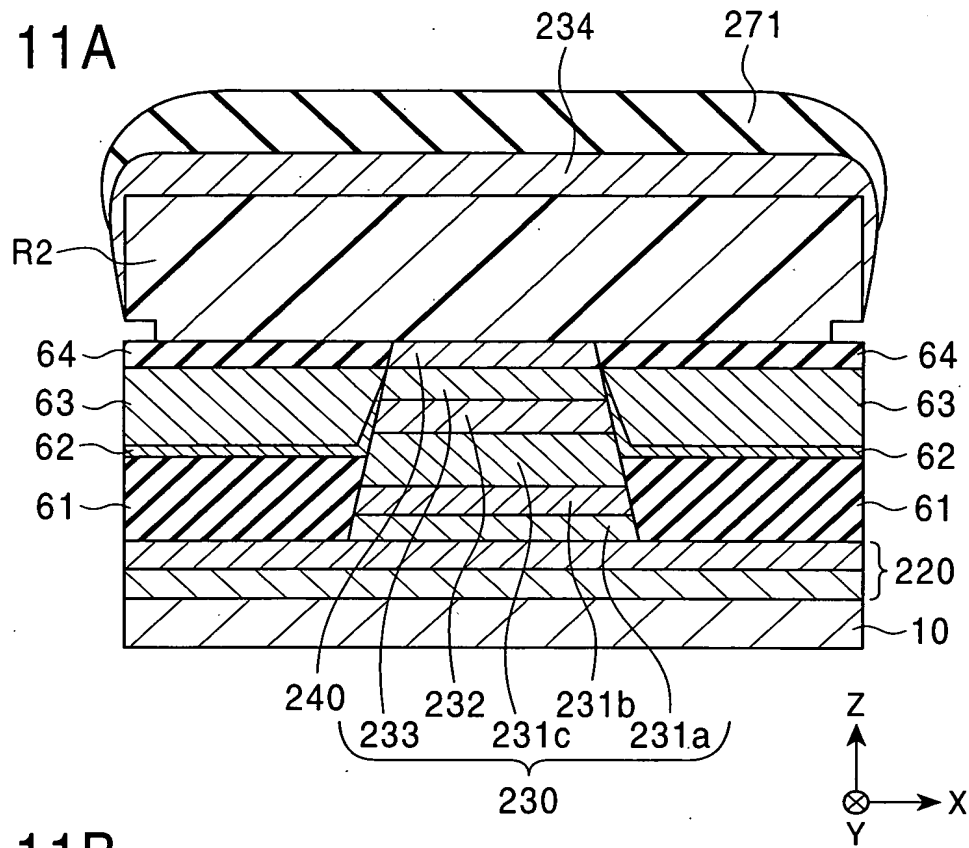


FIG. 11B

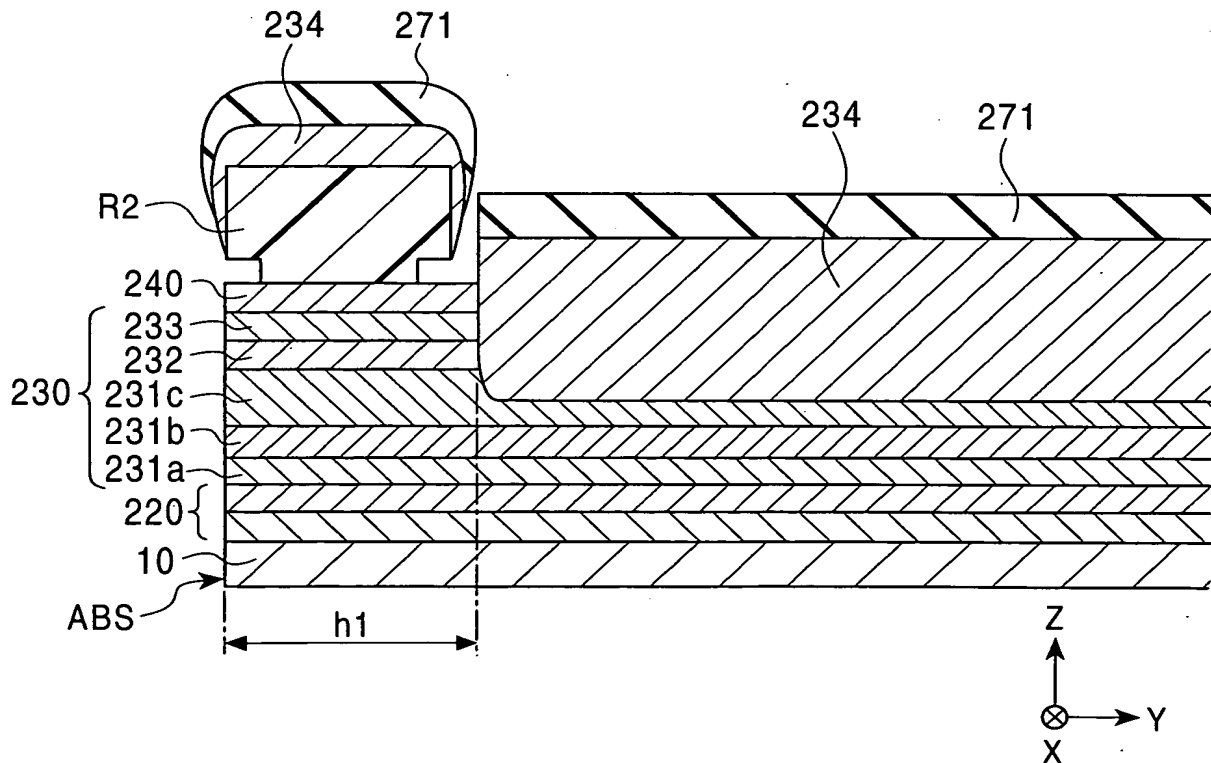




FIG. 12A

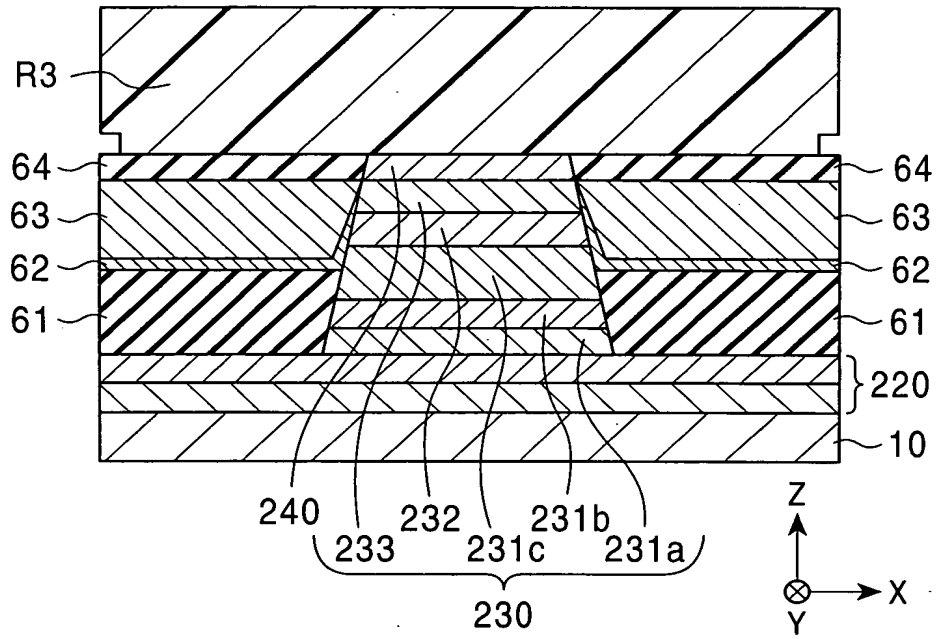
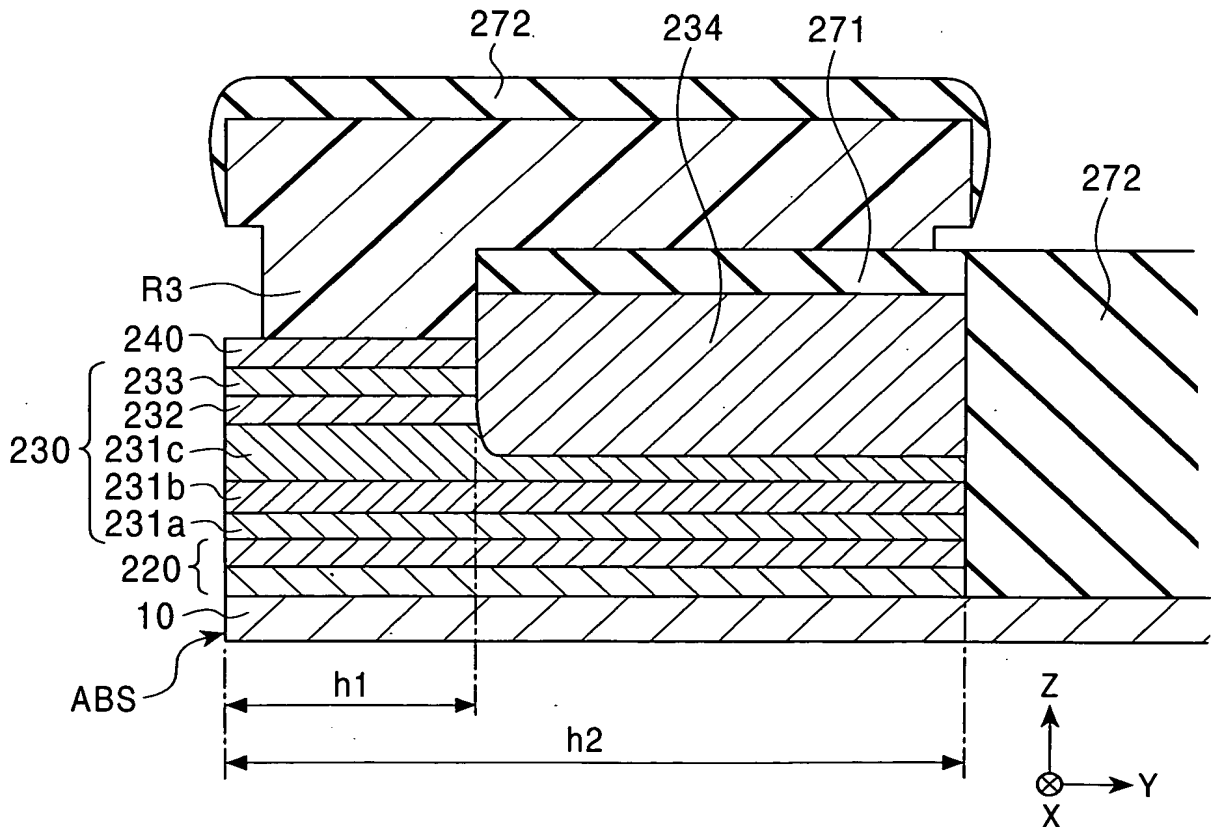


FIG. 12B



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FIG. 13

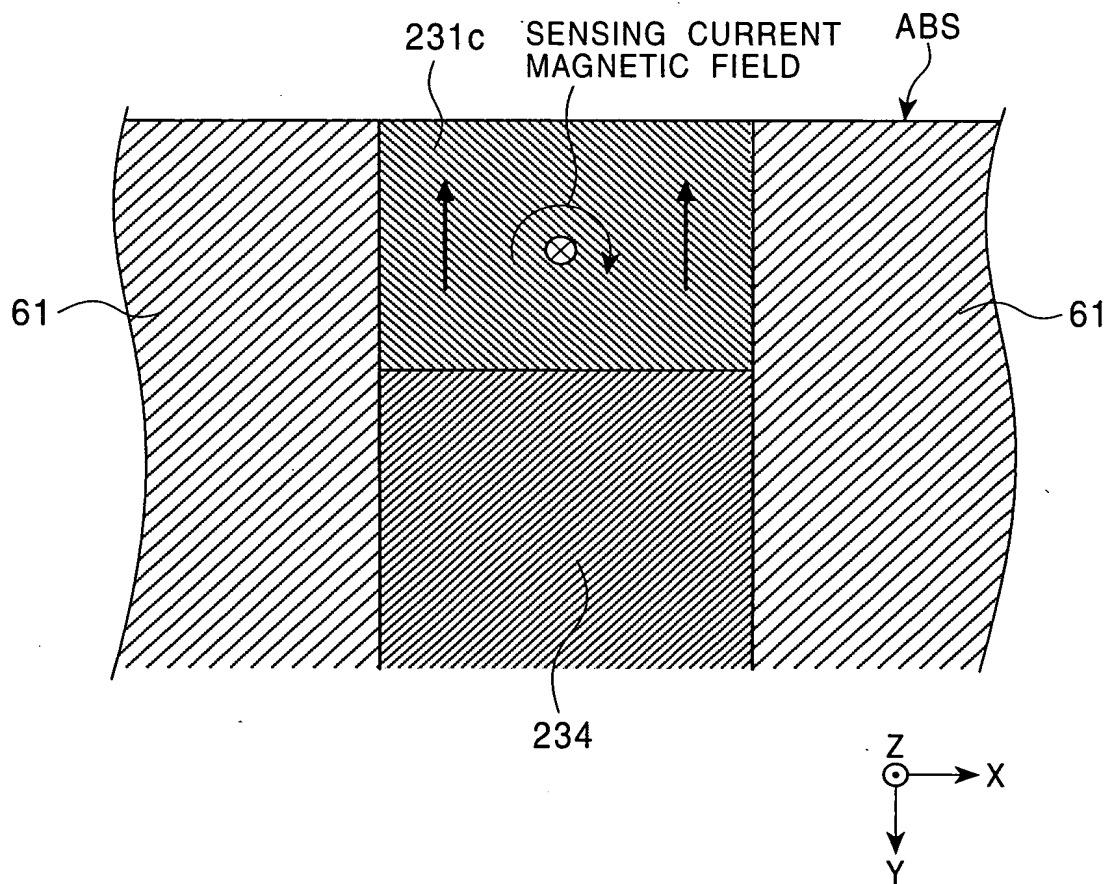
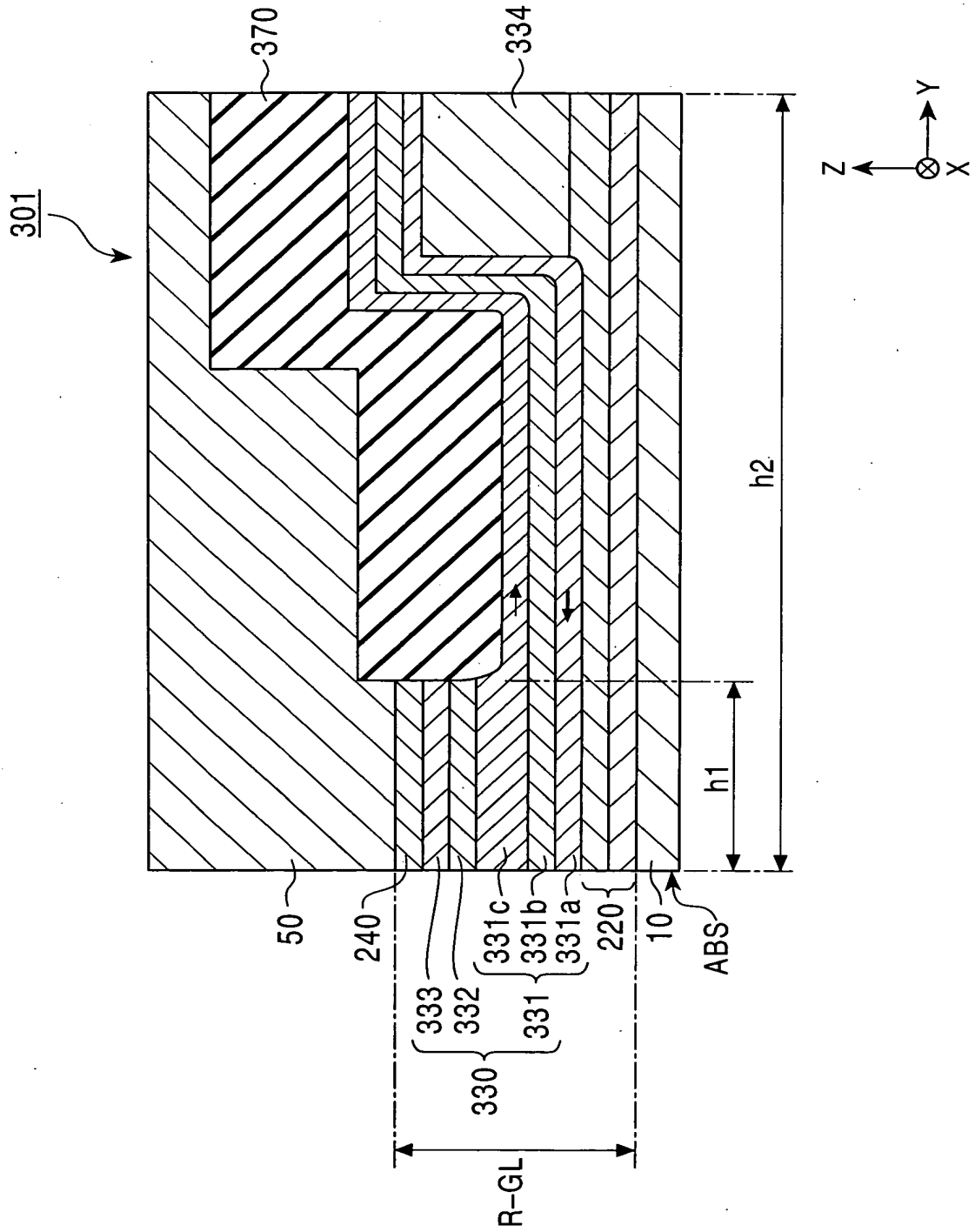


FIG. 14



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FIG. 15

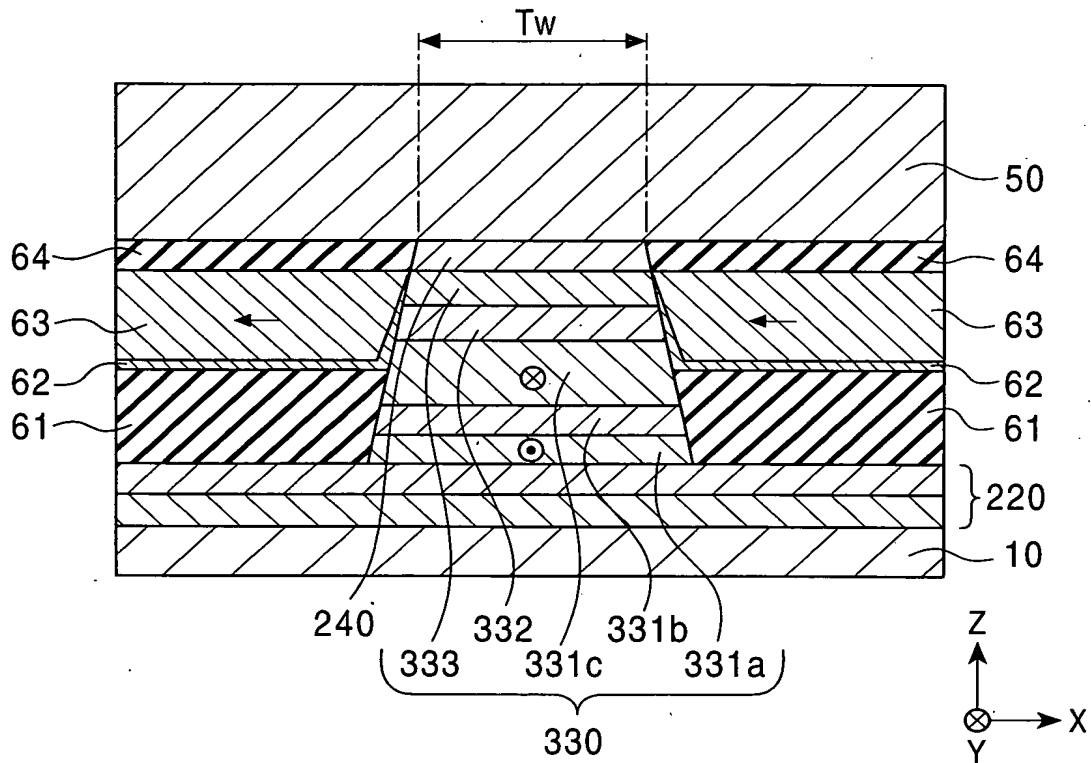
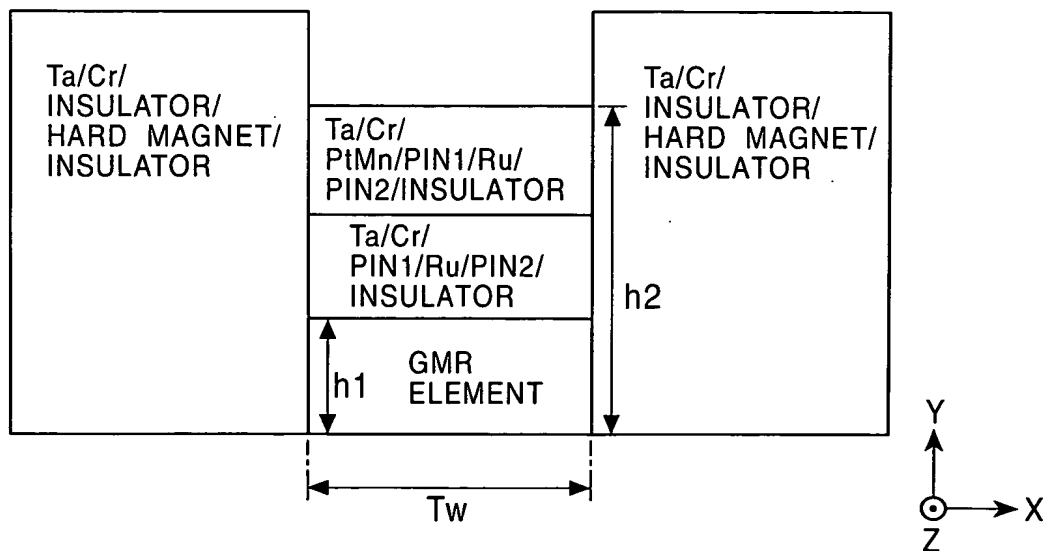


FIG. 16



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FIG. 17

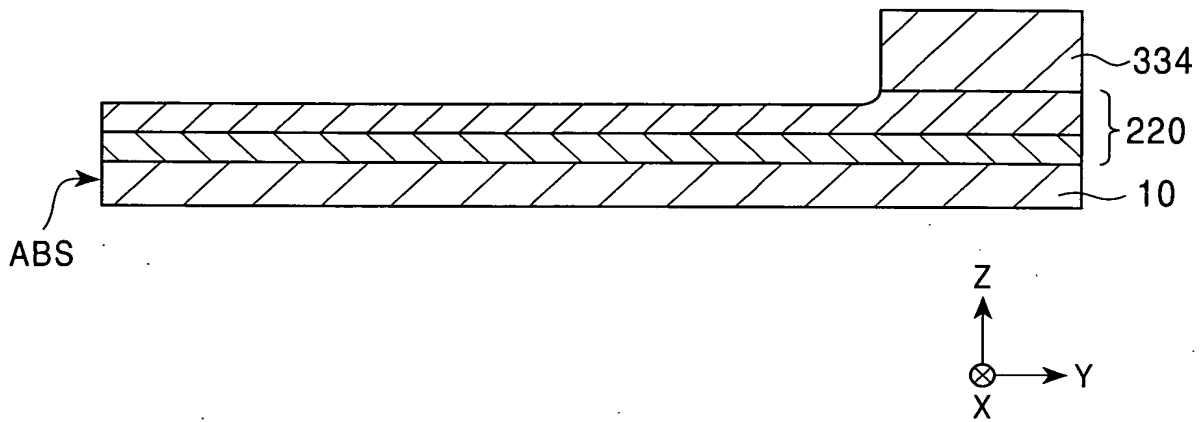
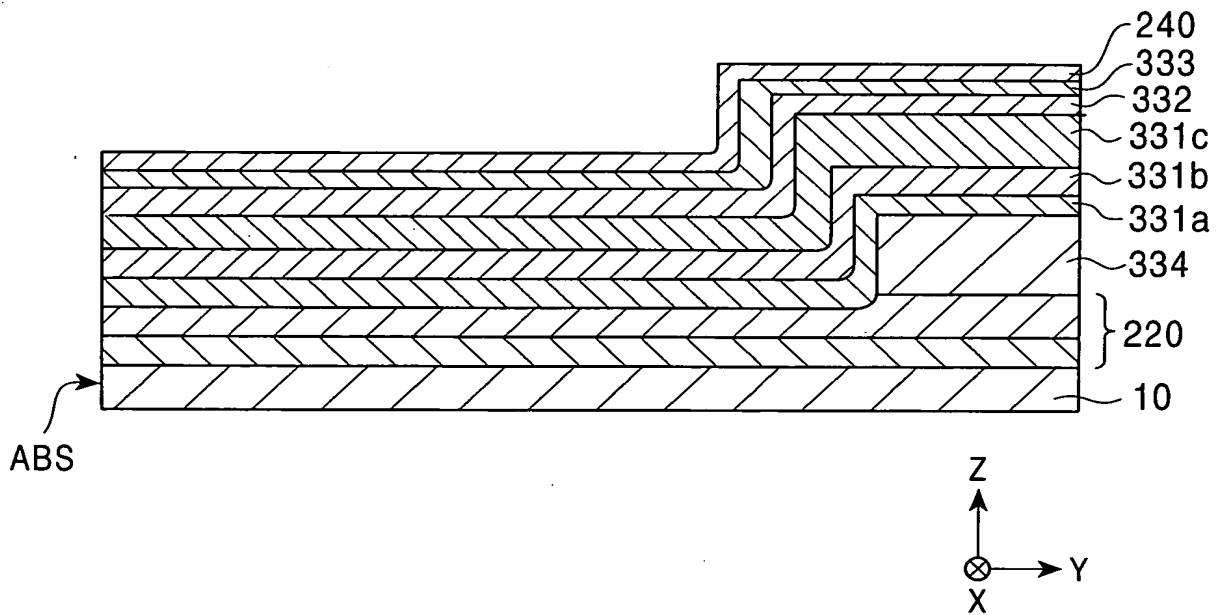


FIG. 18



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FIG. 19

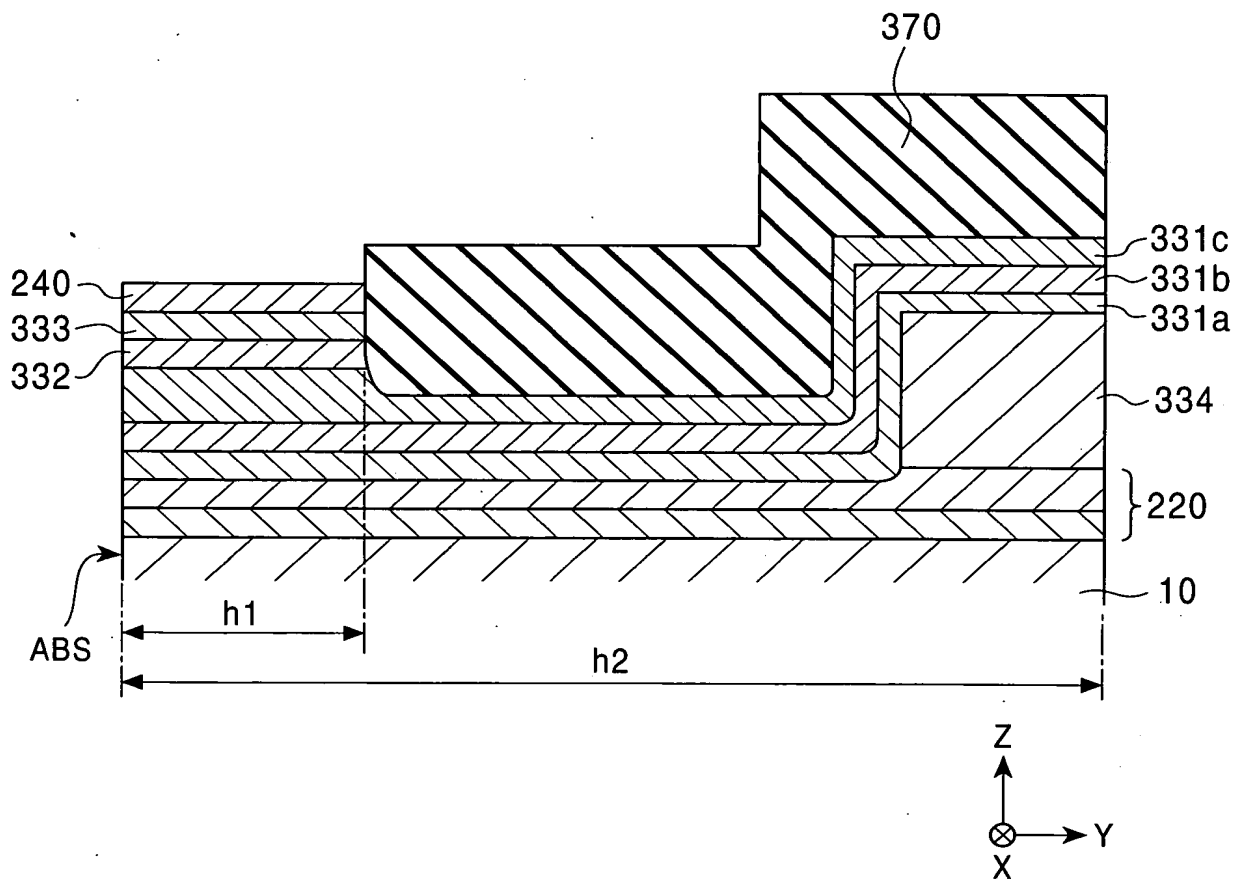


FIG. 20

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FIG. 21

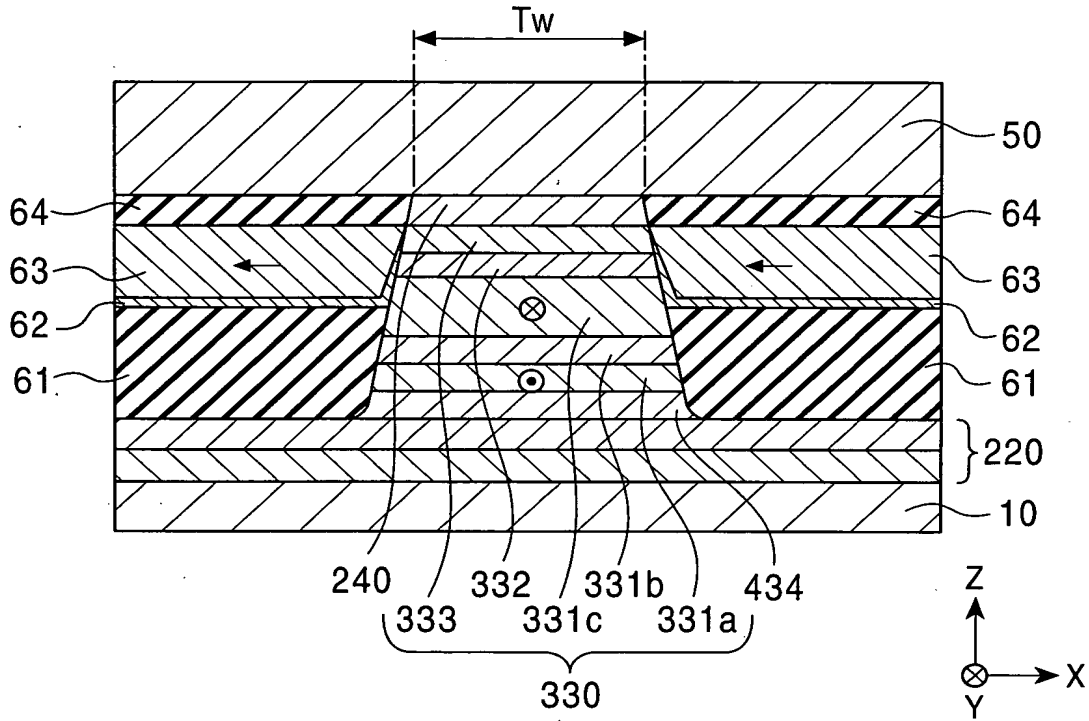


FIG. 22

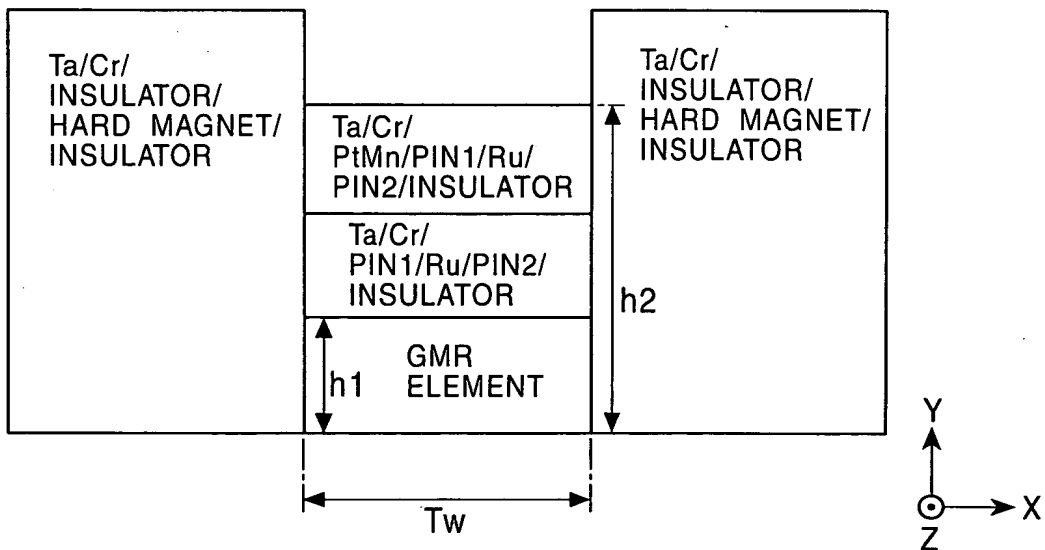
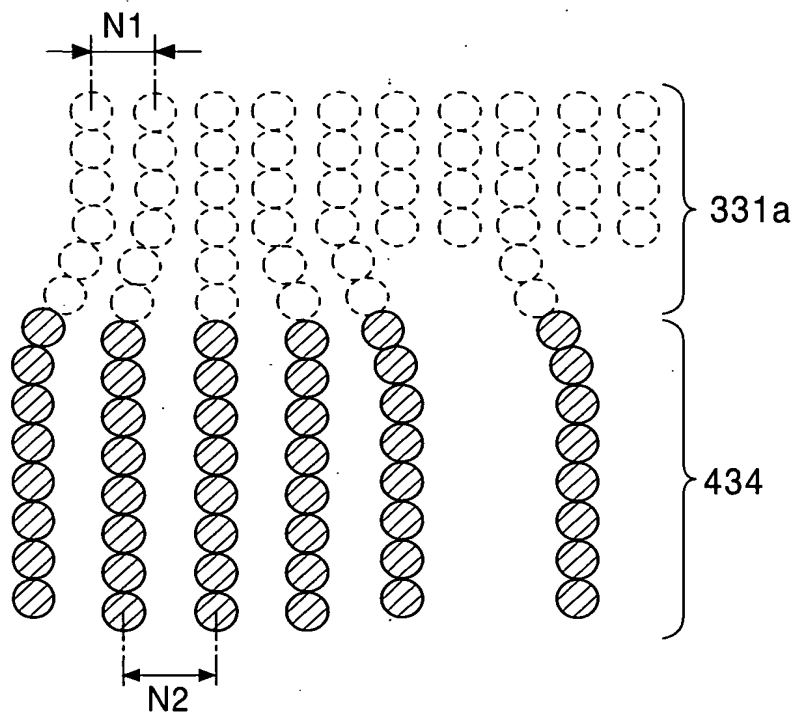




FIG. 23



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FIG. 24

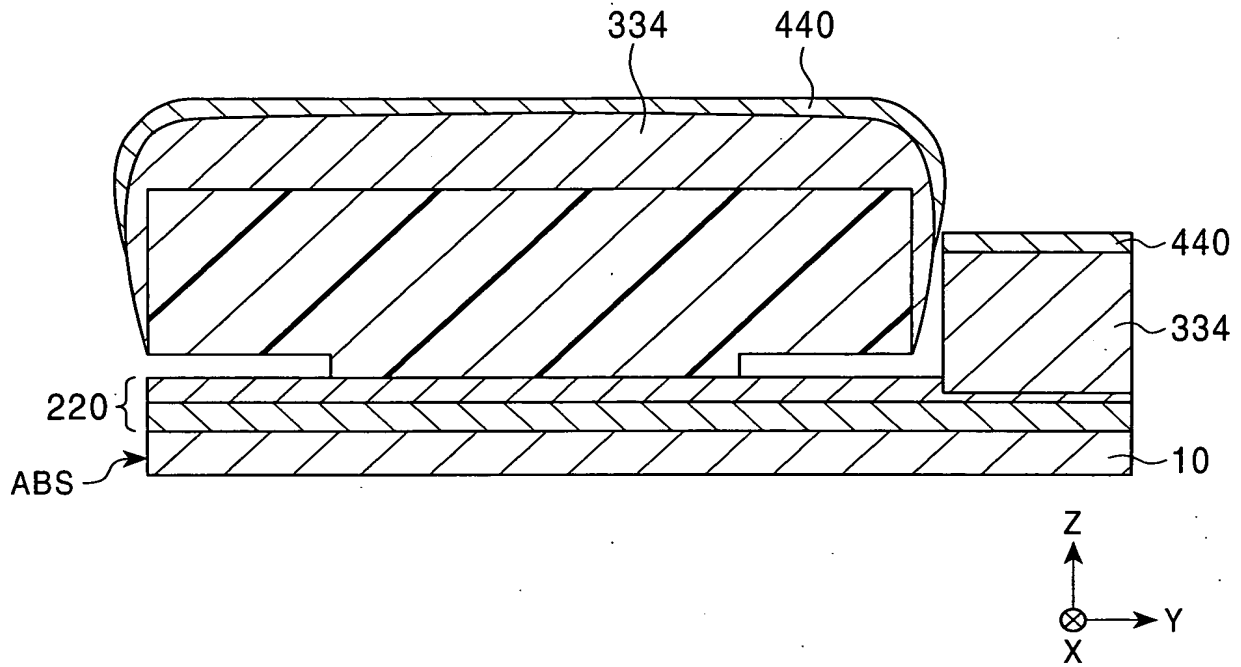


FIG. 25

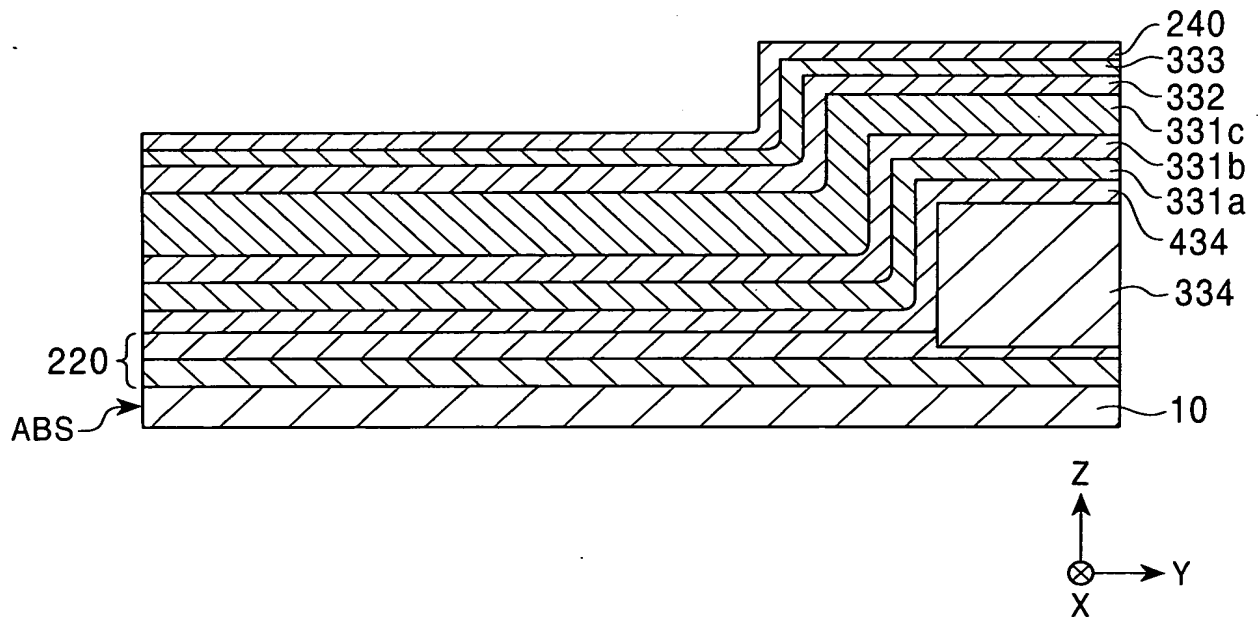
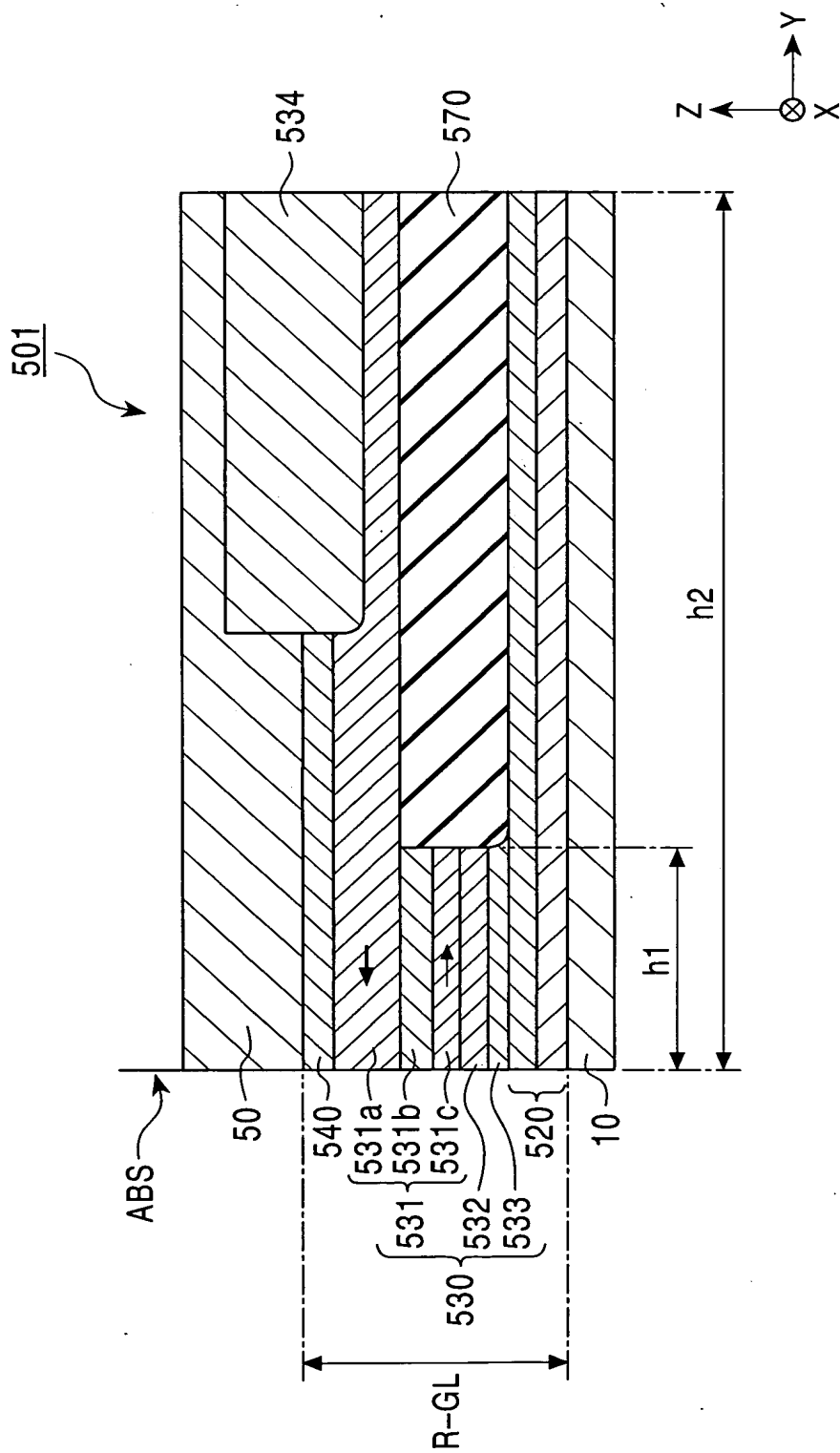


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FIG. 27

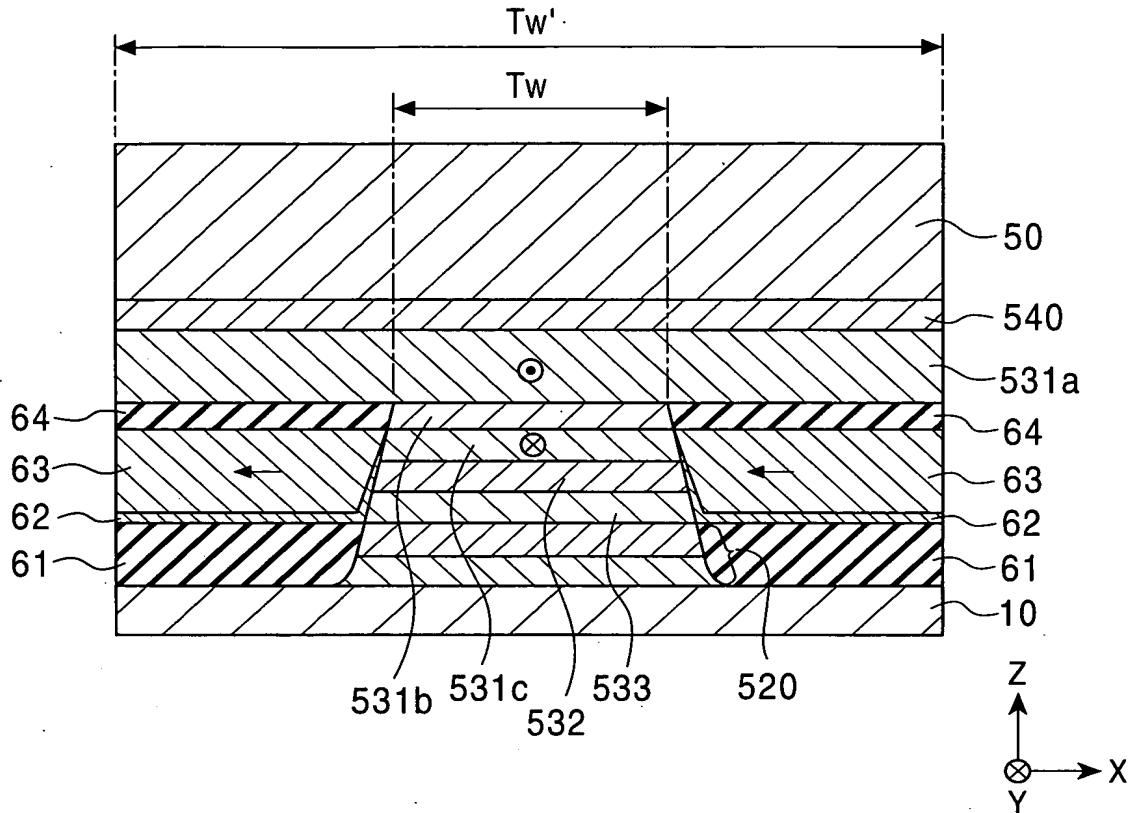
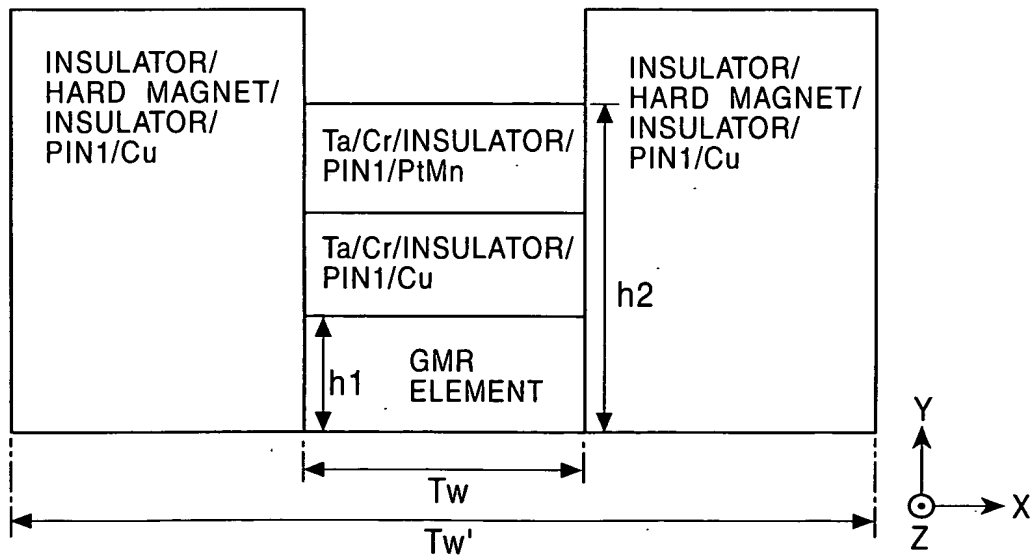
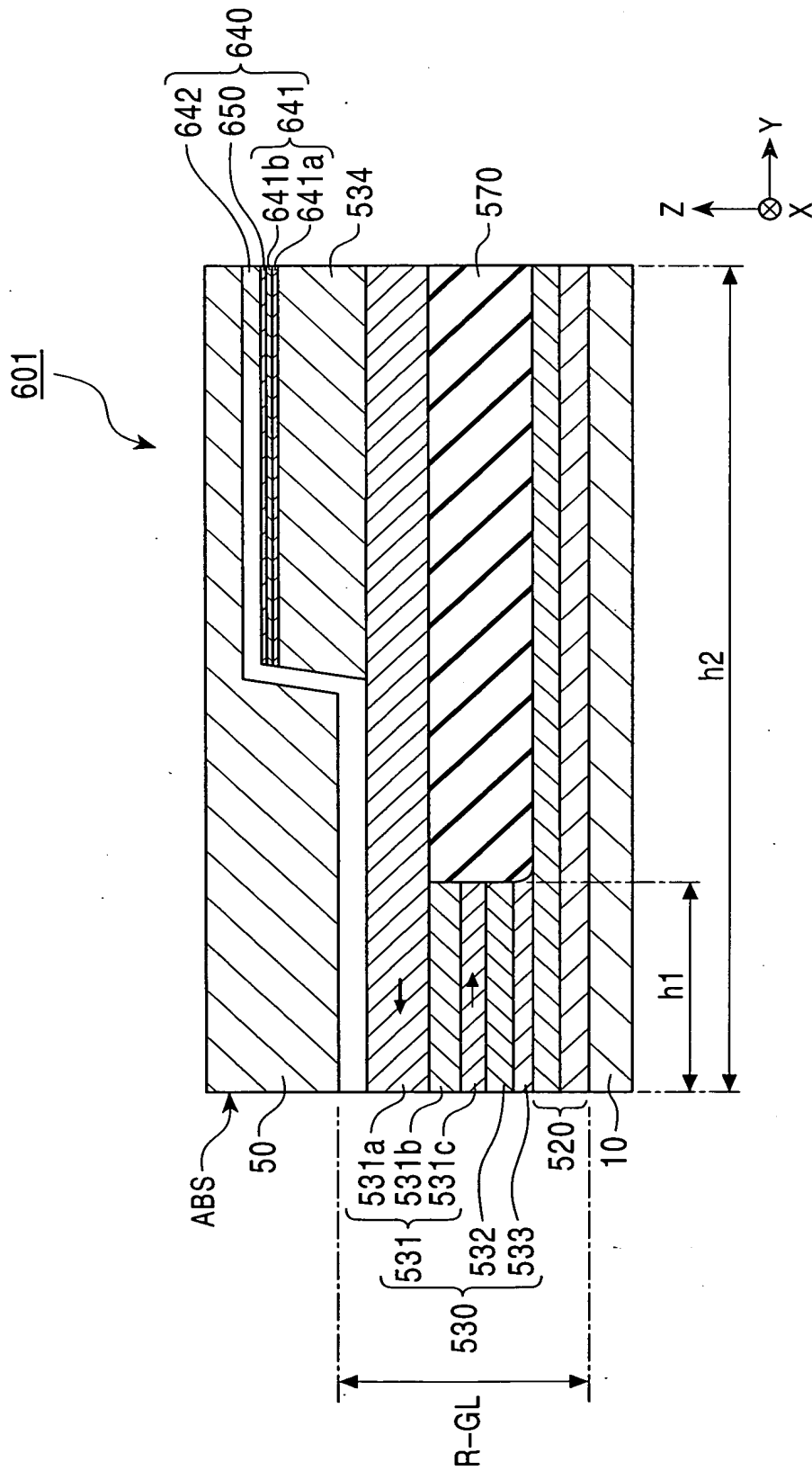


FIG. 28



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FIG. 29



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FIG. 30

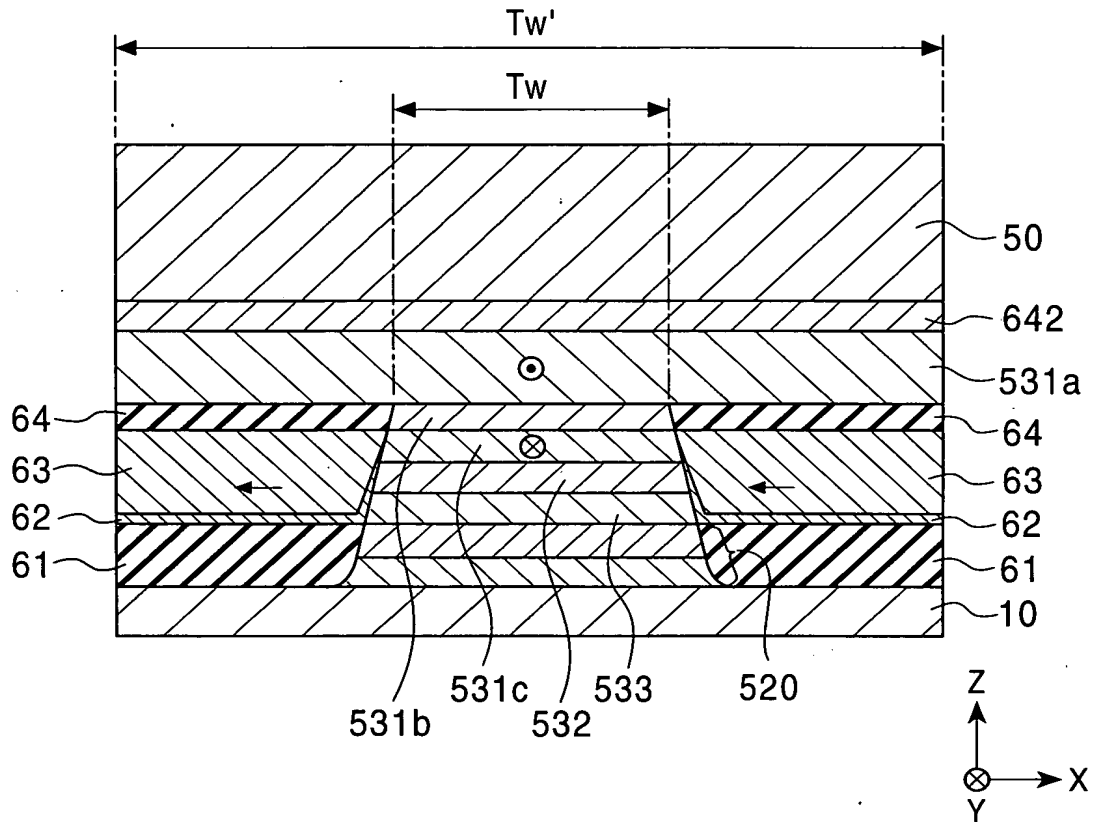
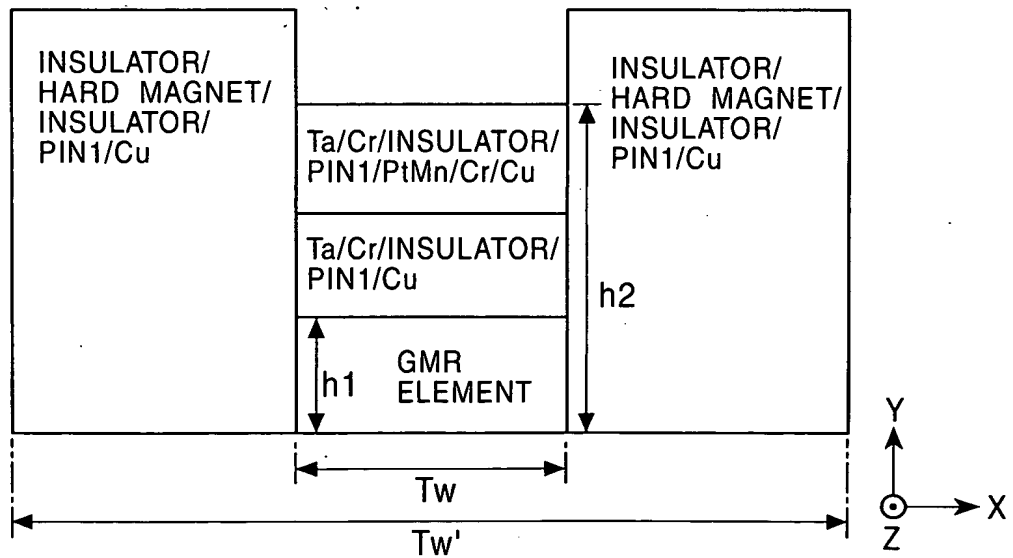


FIG. 31



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FIG. 32

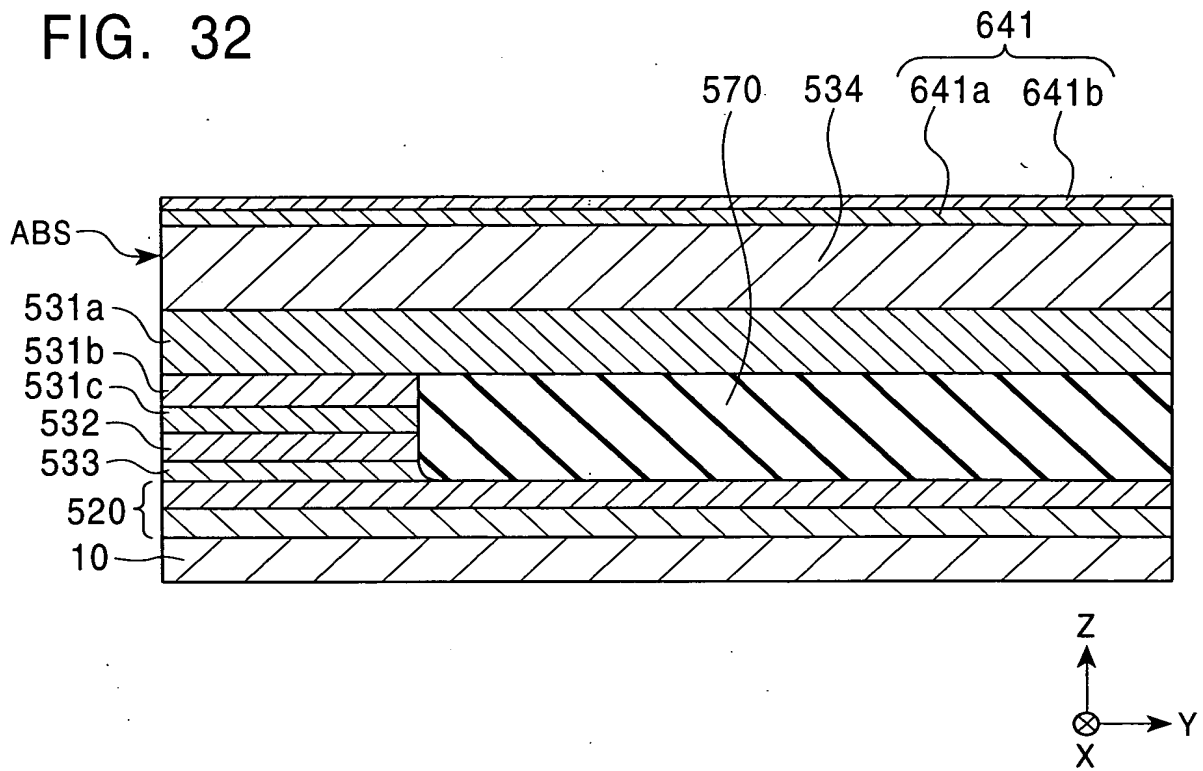
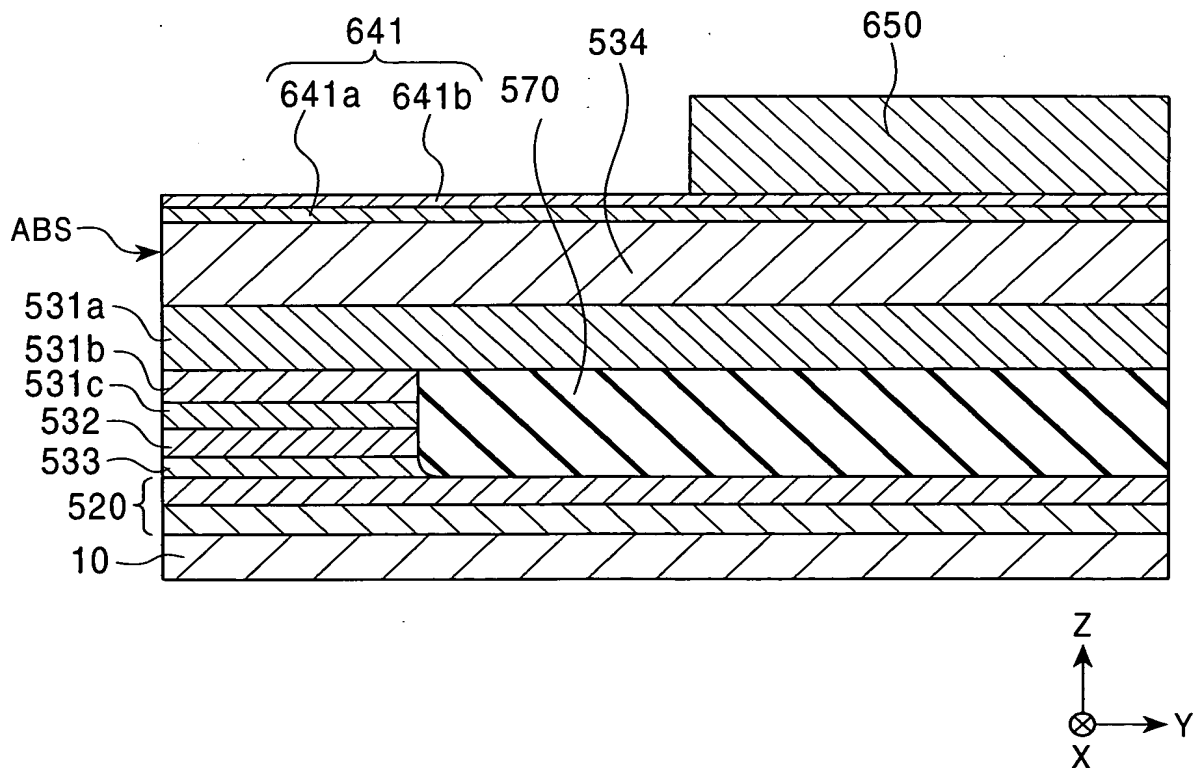


FIG. 33



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FIG. 34

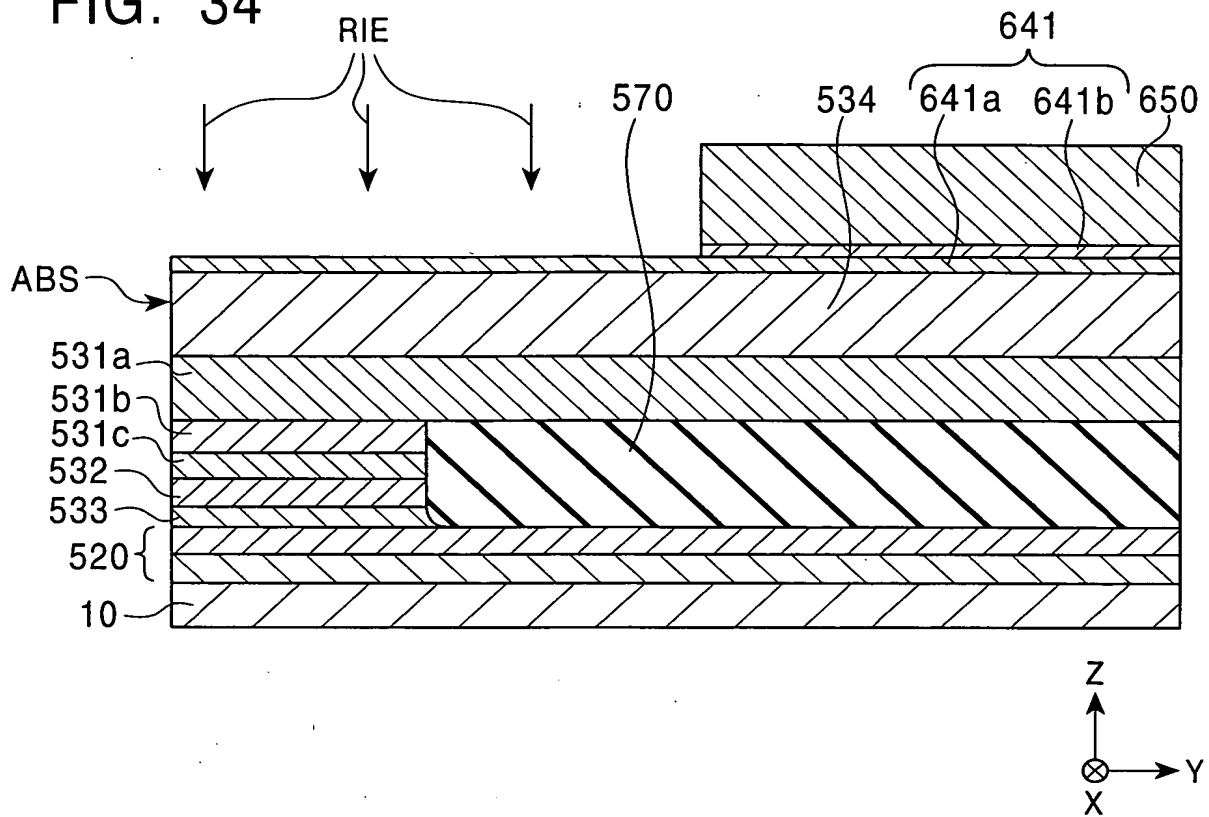
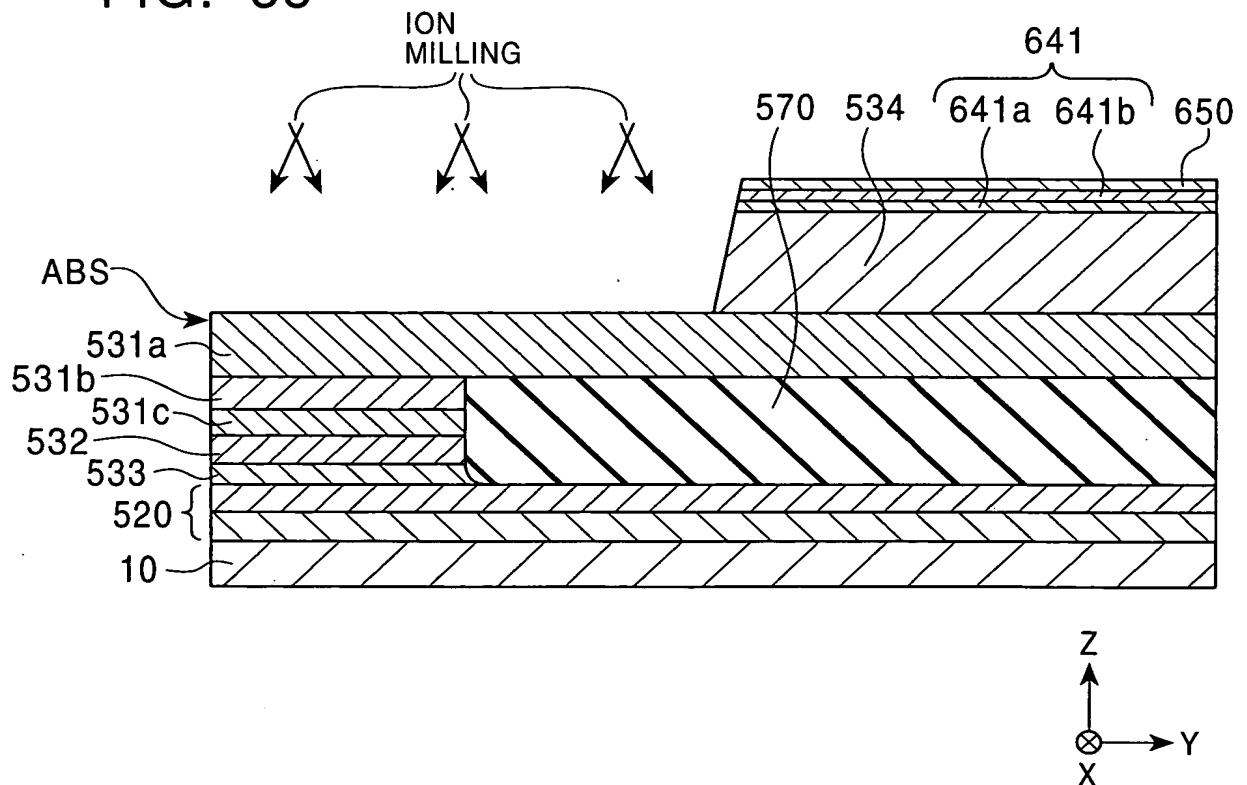


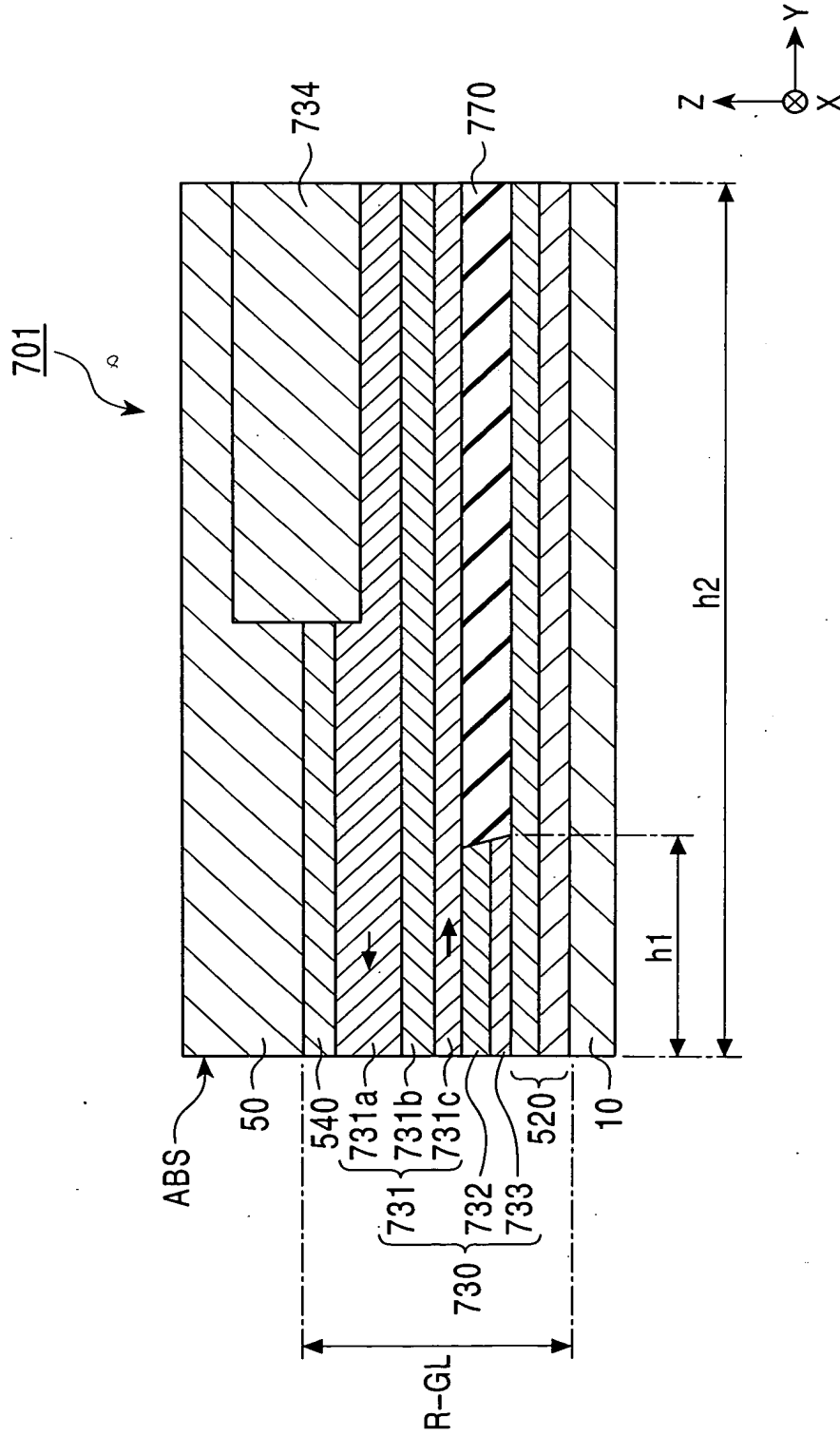
FIG. 35





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FIG. 36



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FIG. 37

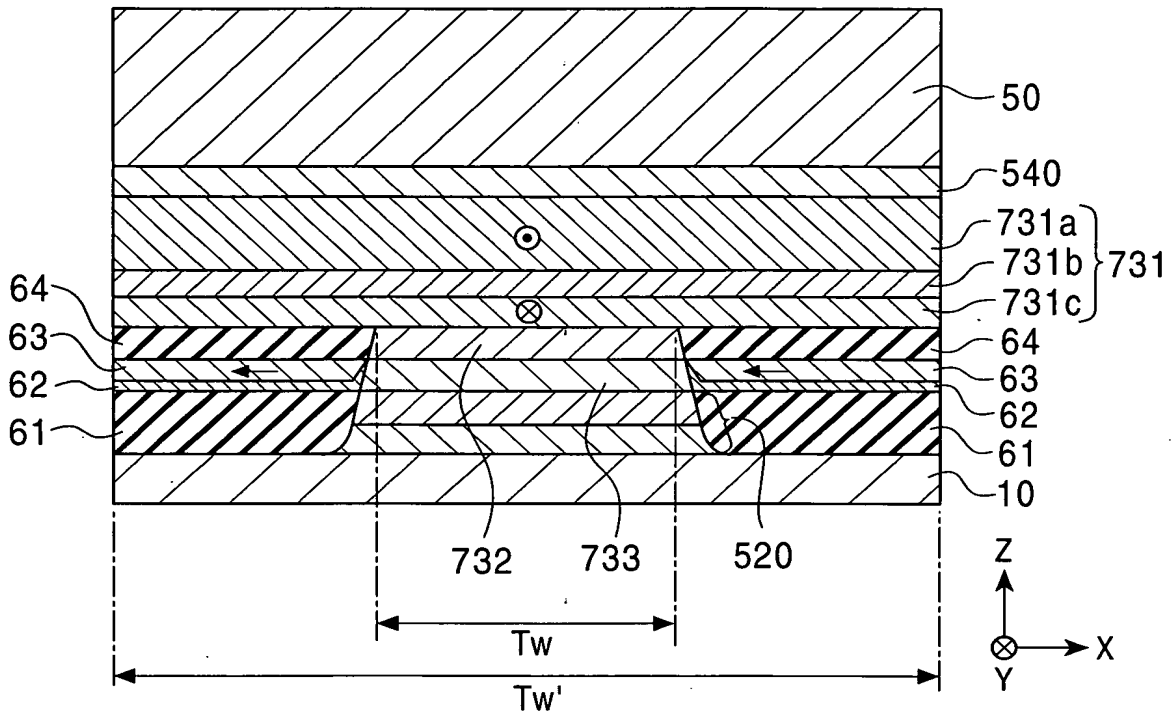
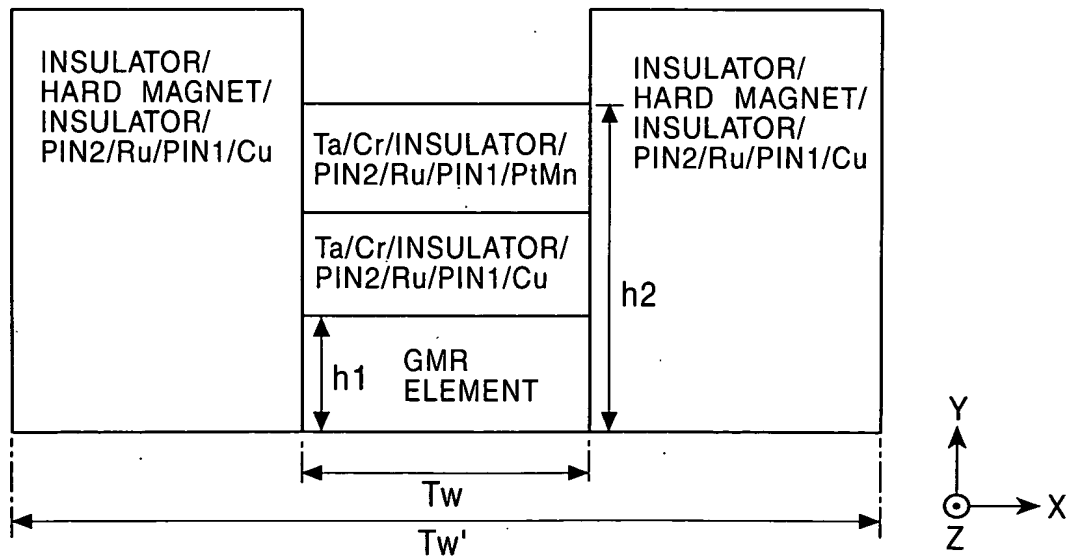
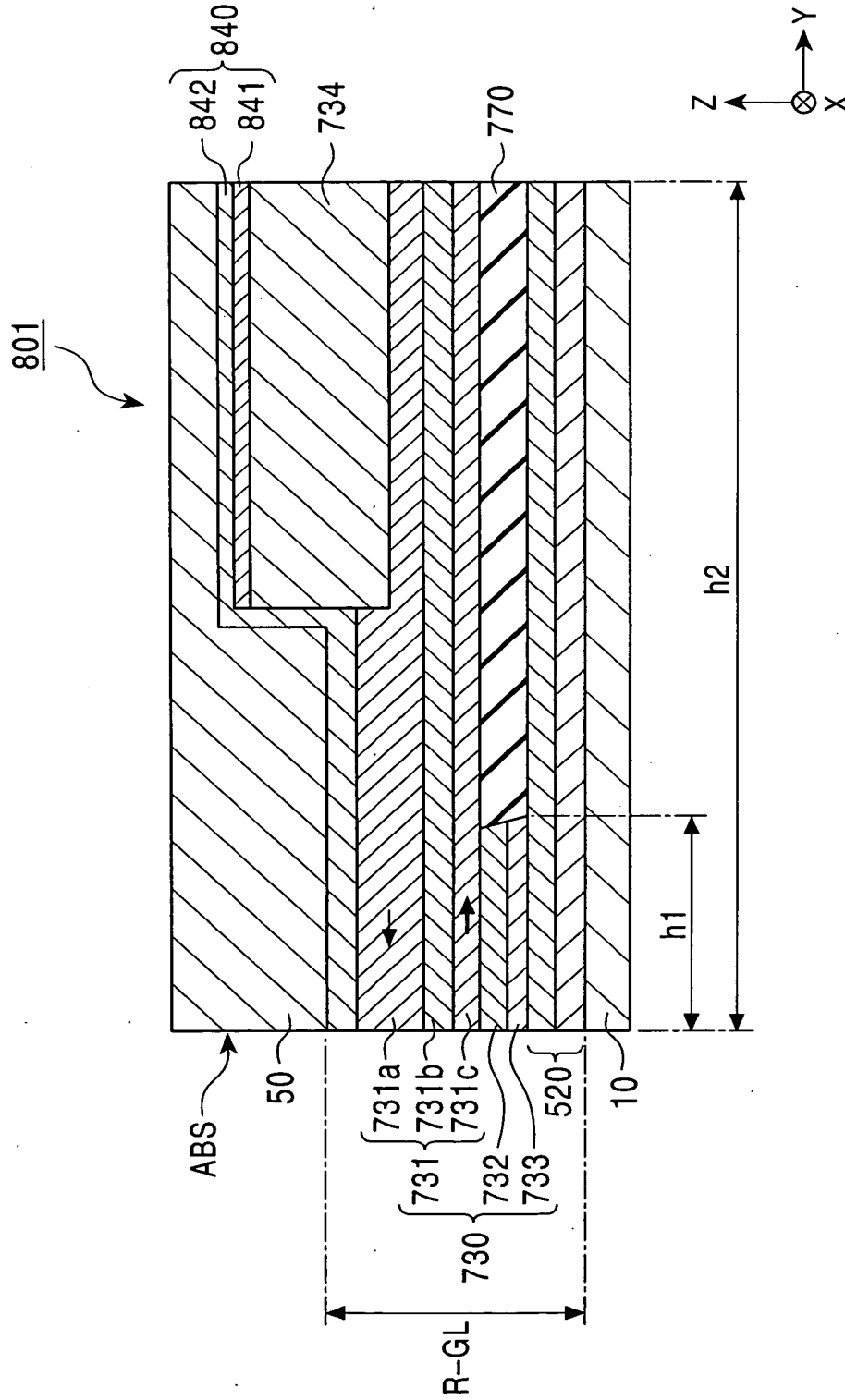


FIG. 38



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FIG. 39



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FIG. 40

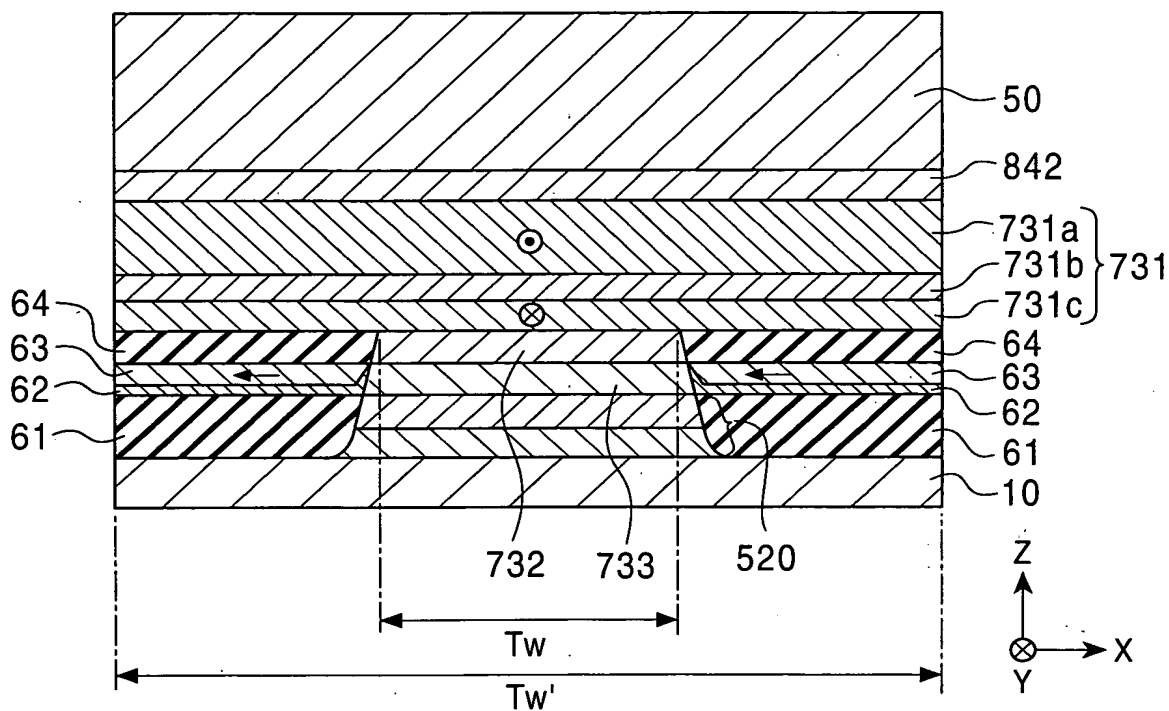
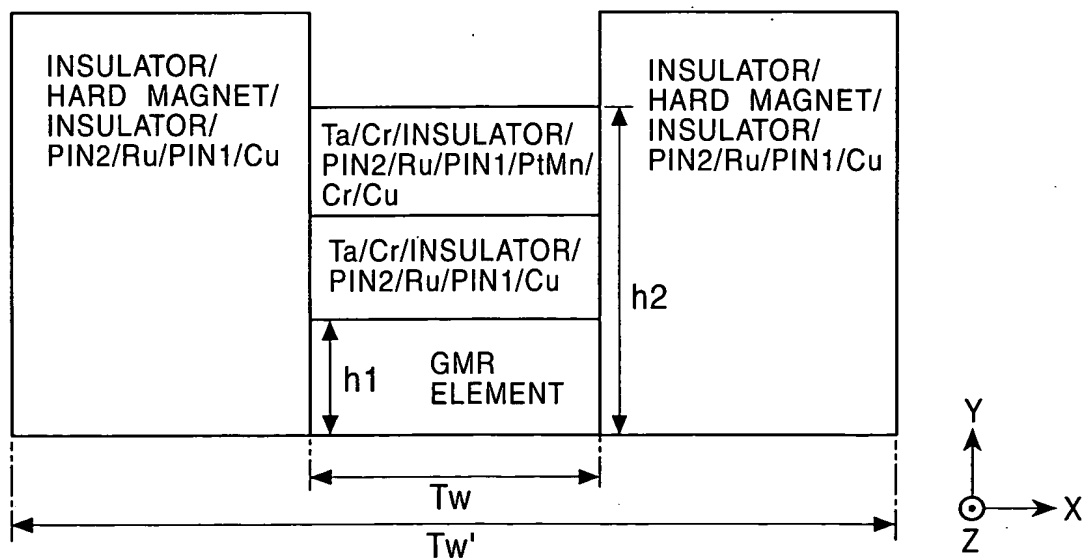
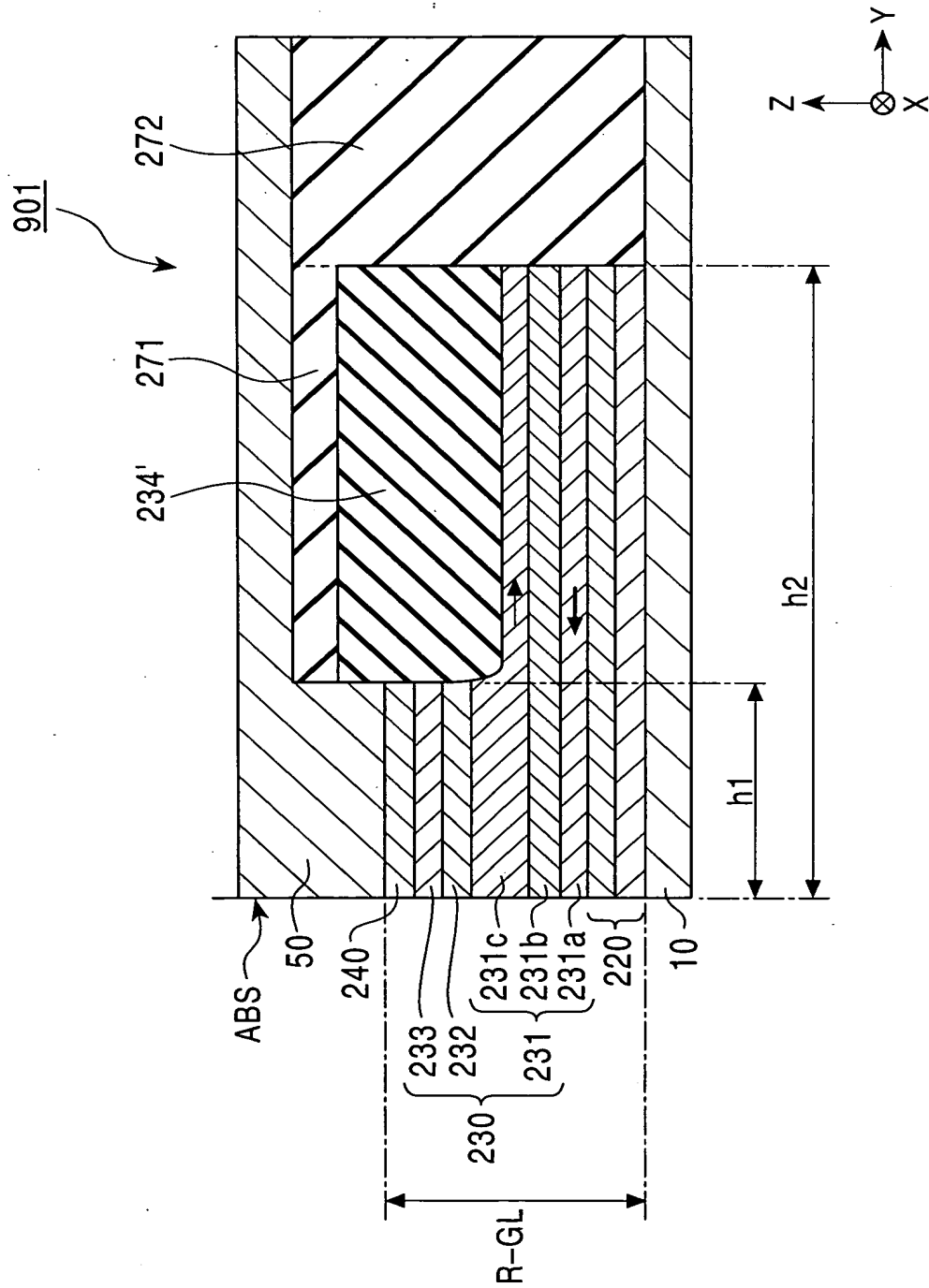


FIG. 41



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FIG. 42



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FIG. 43

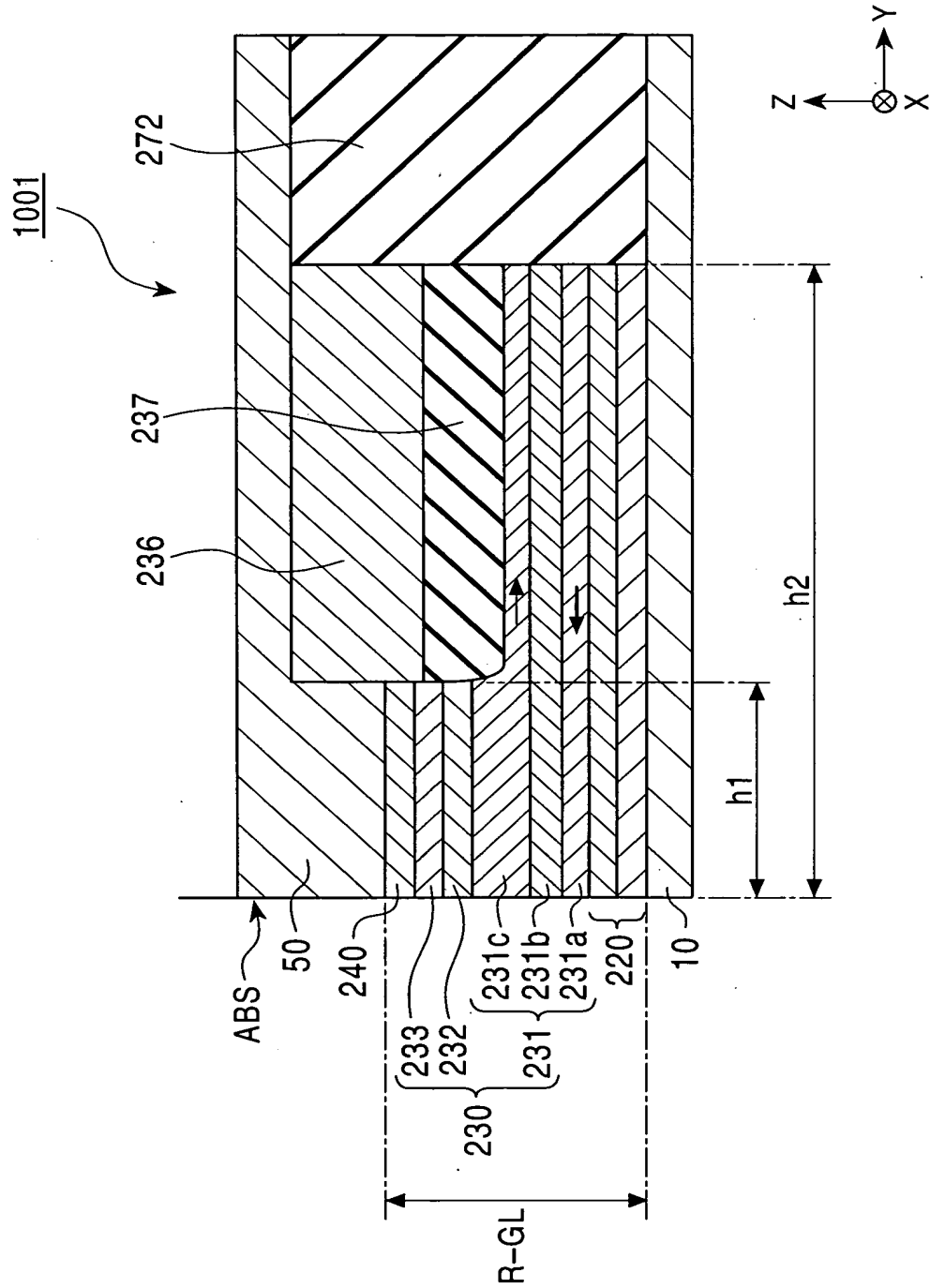


FIG. 44

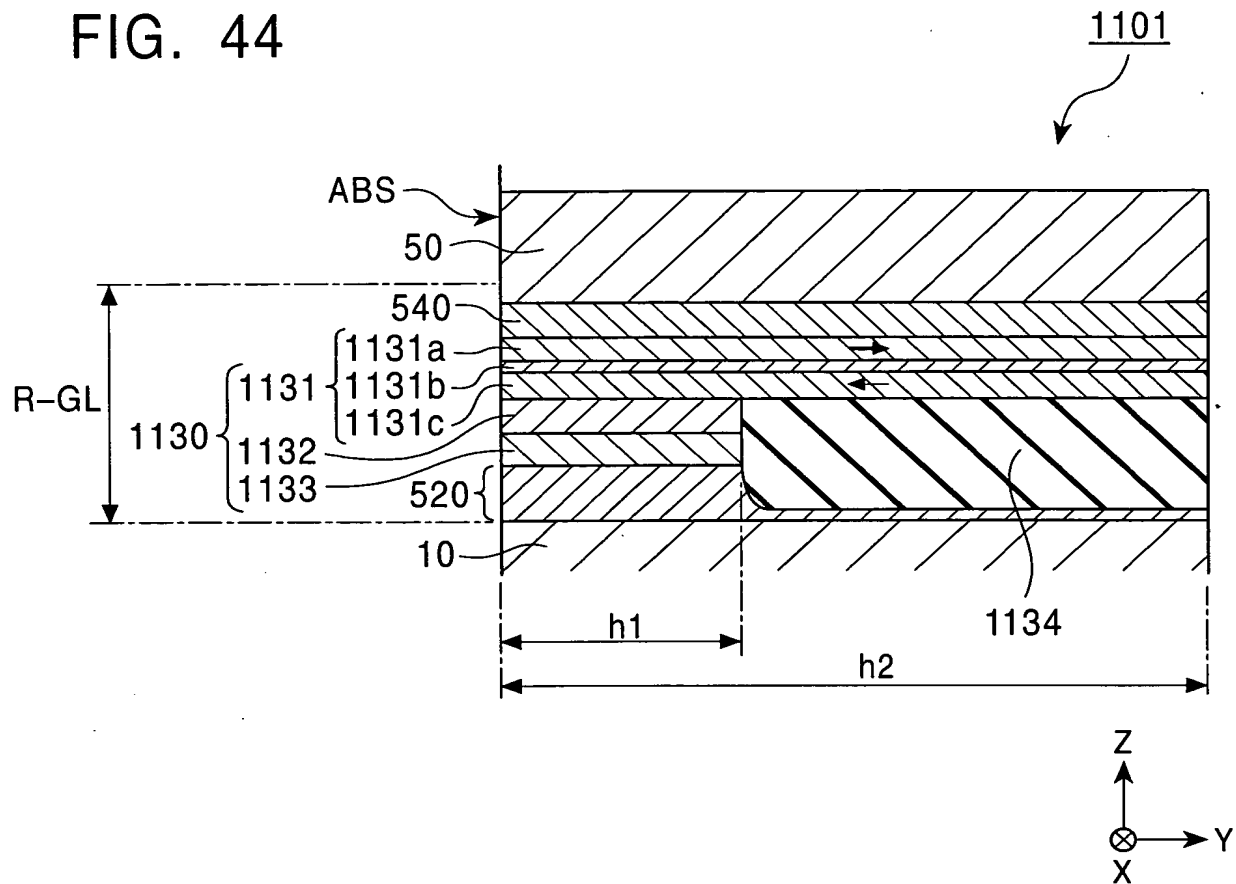
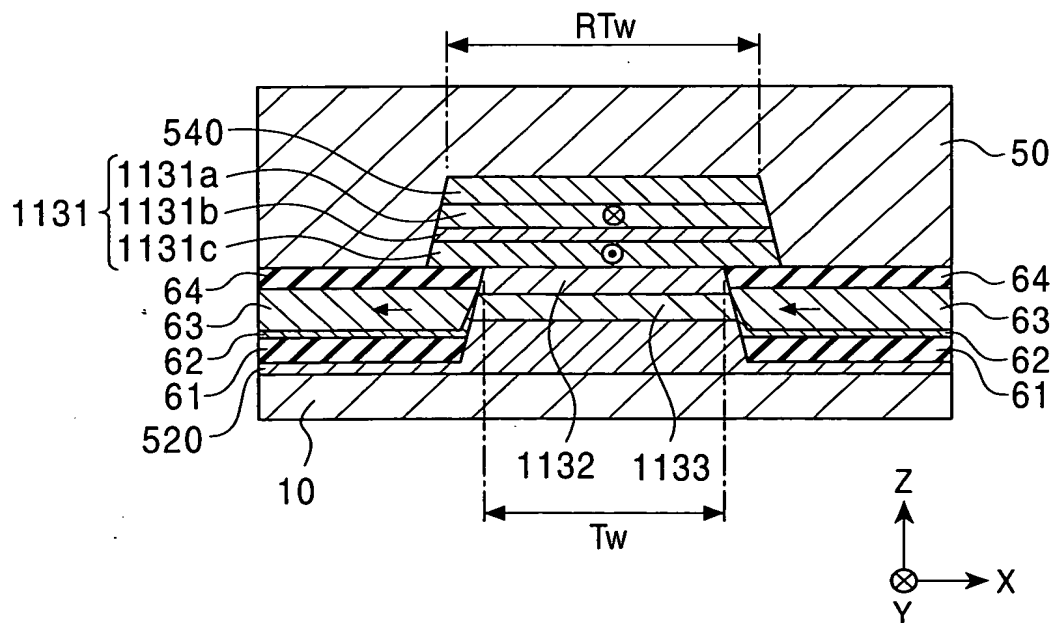


FIG. 45



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FIG. 46

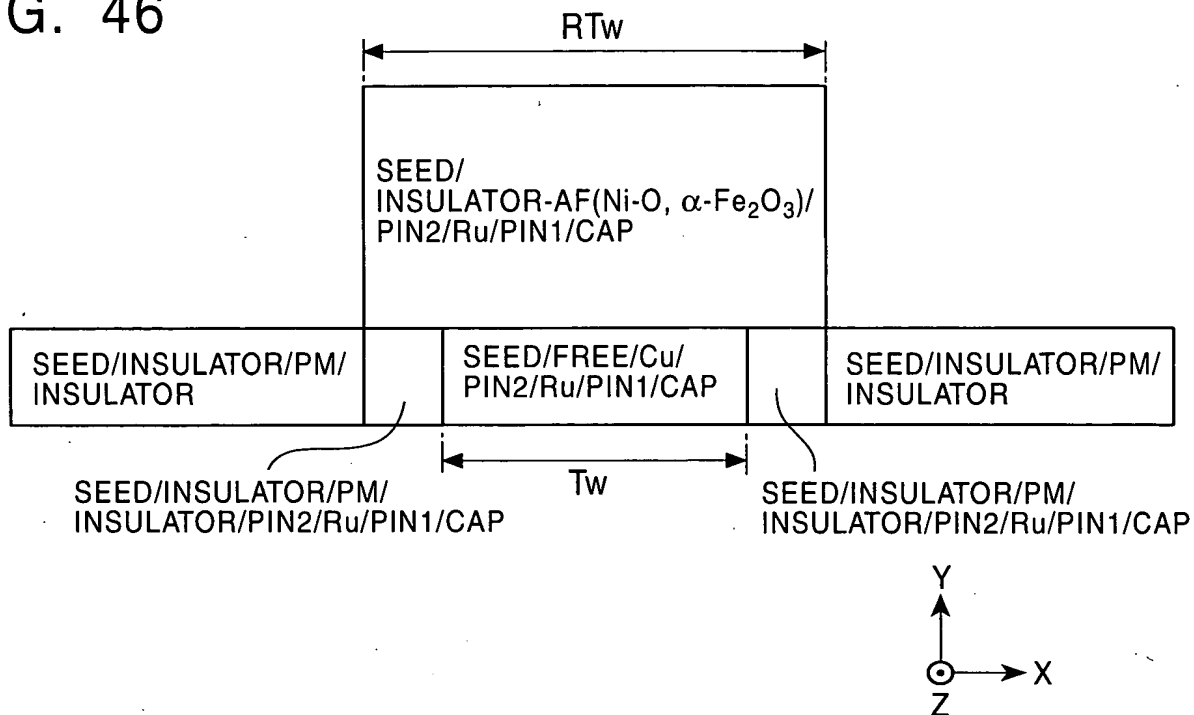
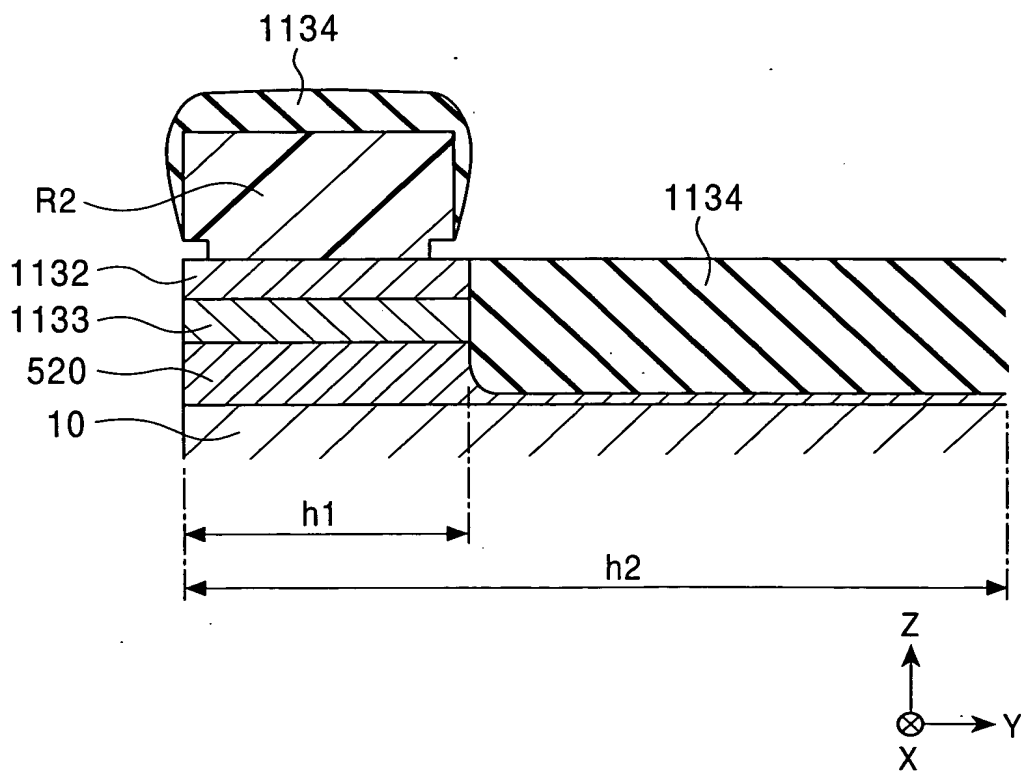


FIG. 47





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FIG. 48A

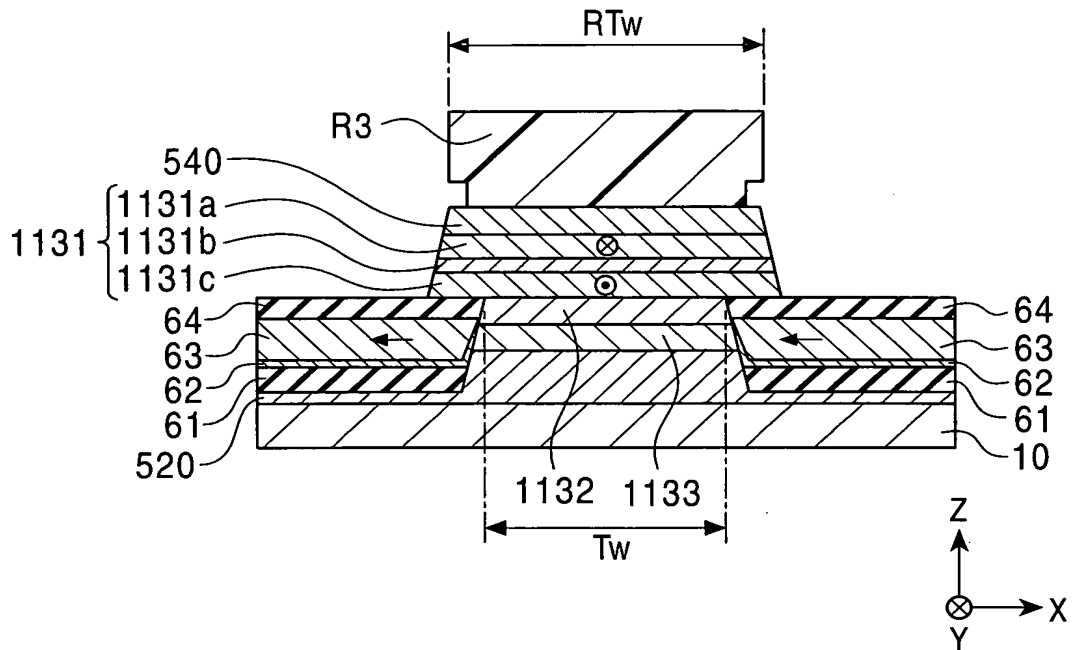
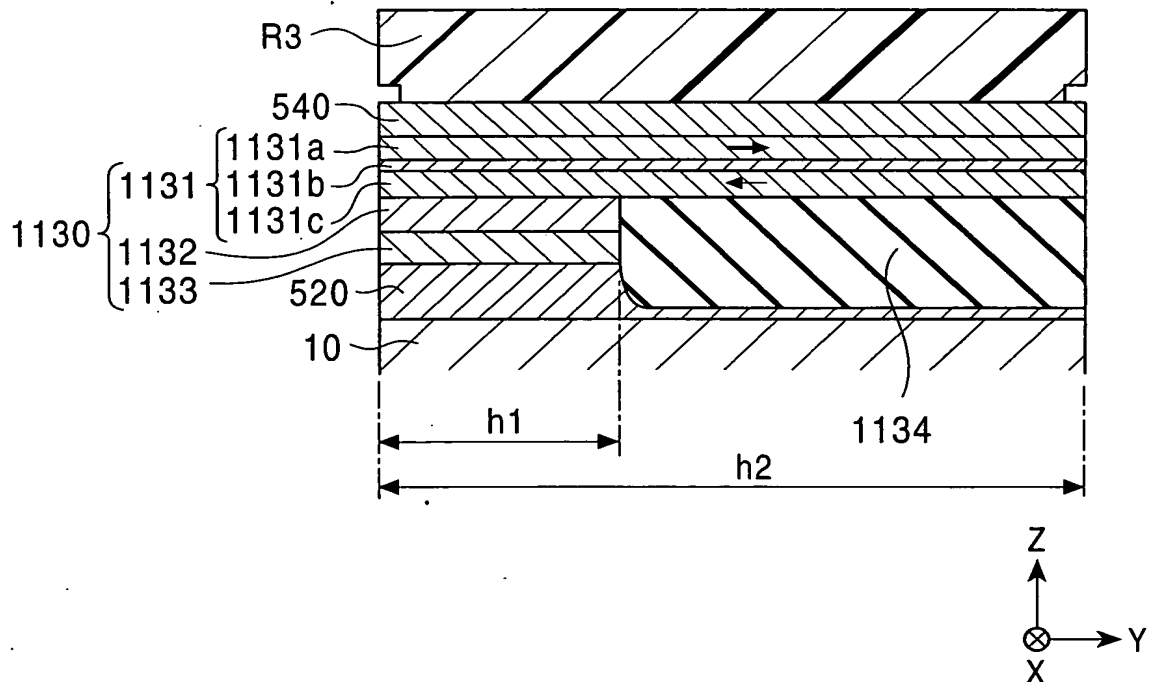


FIG. 48B



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FIG. 49

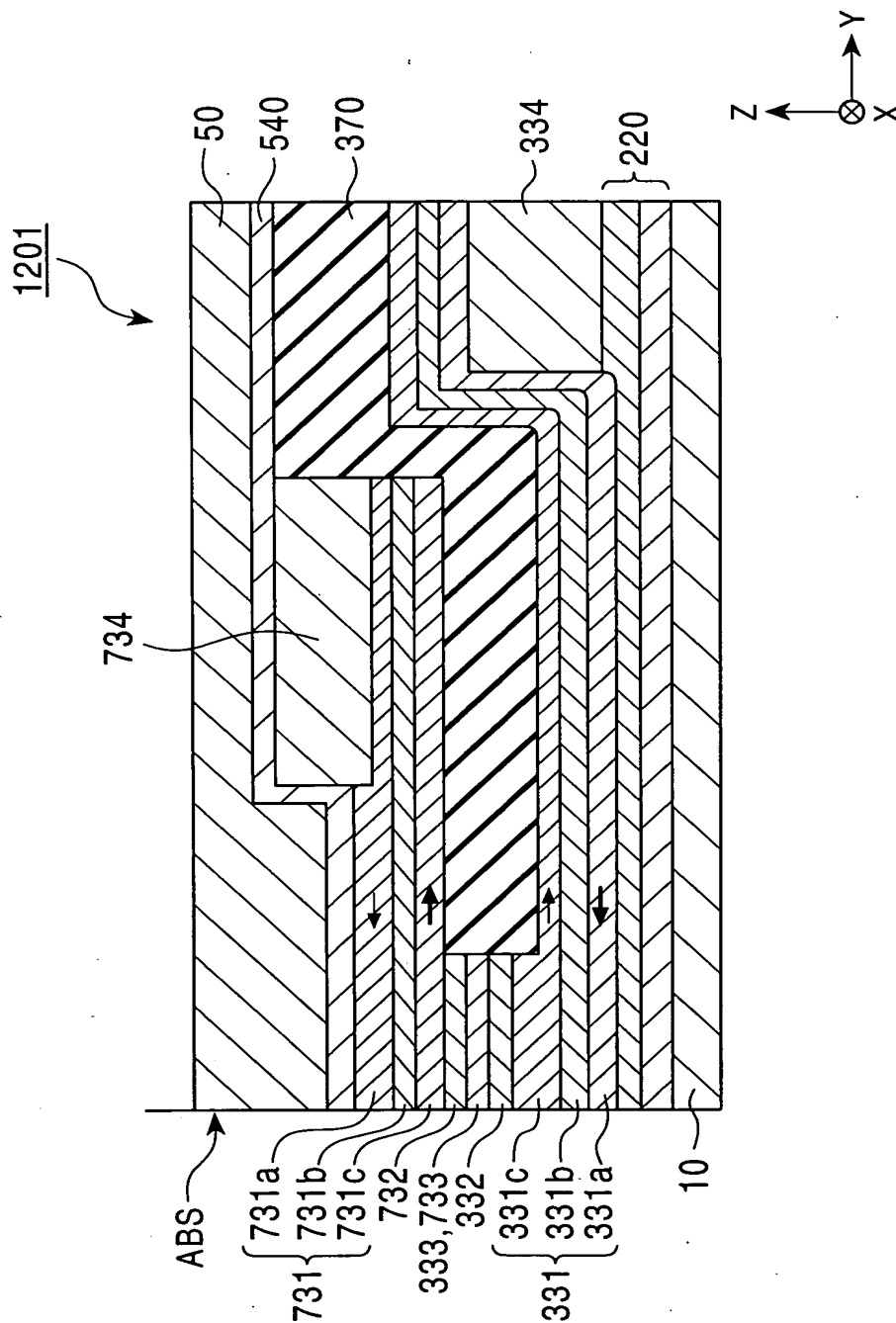


FIG. 50

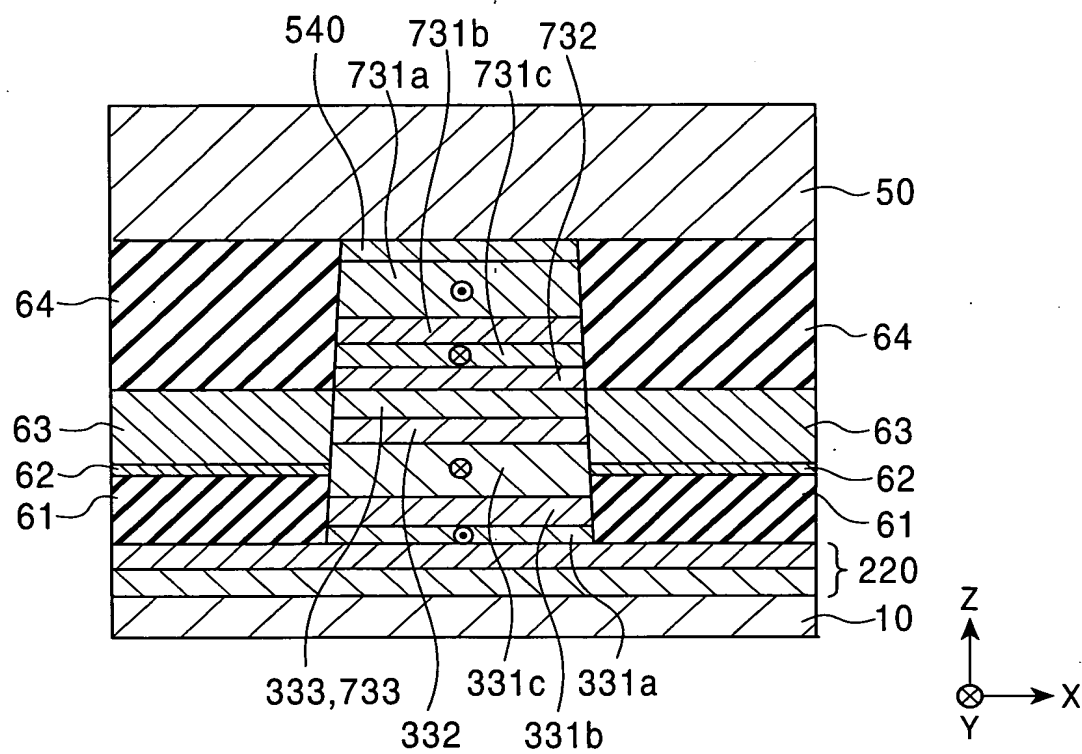
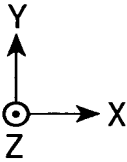


FIG. 51

Ta/Cr/INSULATOR/ HARD MAGNET/ INSULATOR	Ta/Cr/PtMn/PIN1/Ru/ PIN2/INSULATOR/Cu	Ta/Cr/INSULATOR/ HARD MAGNET/ INSULATOR
	Ta/Cr/PIN1/Ru/PIN2/ INSULATOR/Cu	
	Ta/Cr/PIN1/Ru/PIN2/ INSULATOR/PIN2/Ru/ PIN1/PtMn/Cu	
	Ta/Cr/PIN1/Ru/PIN2/ INSULATOR/PIN2/Ru/ PIN1/Cu	
	GMR ELEMENT	



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FIG. 52

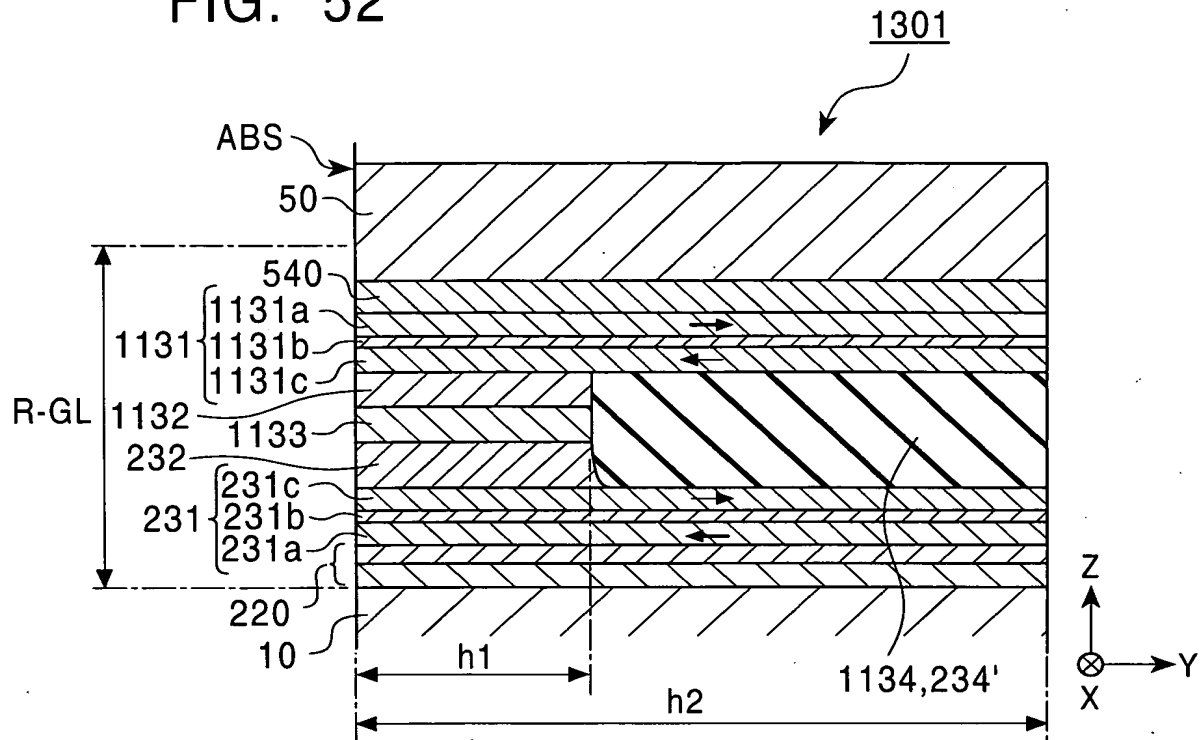
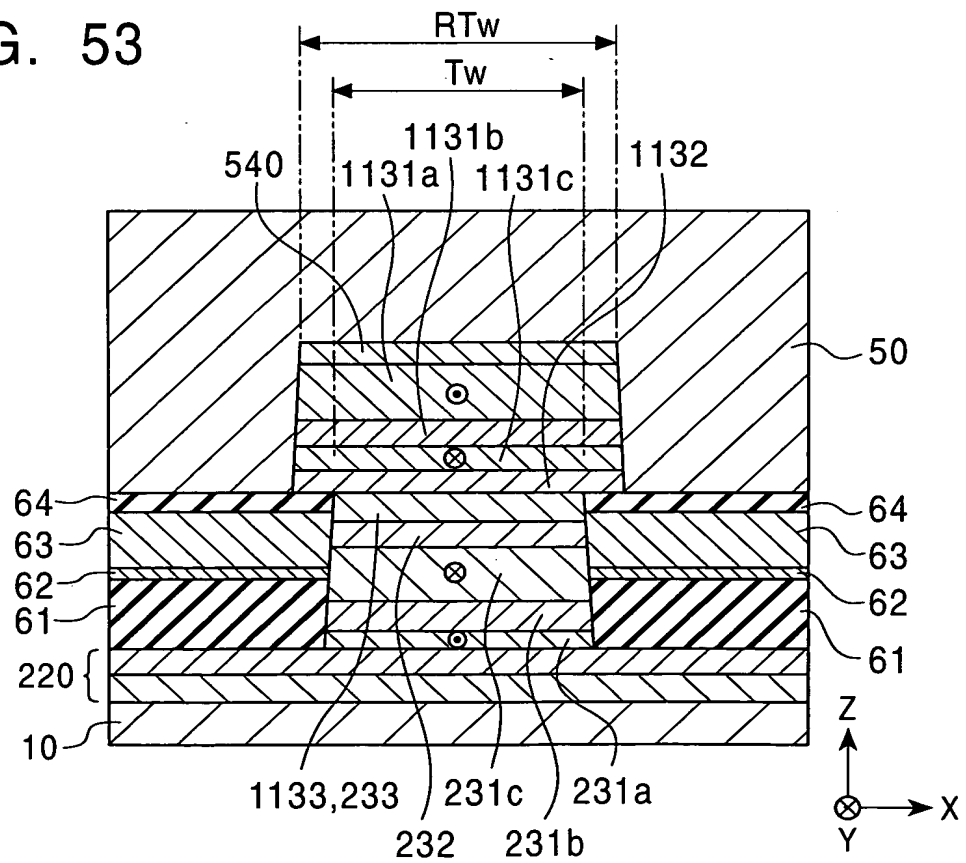


FIG. 53



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FIG. 54

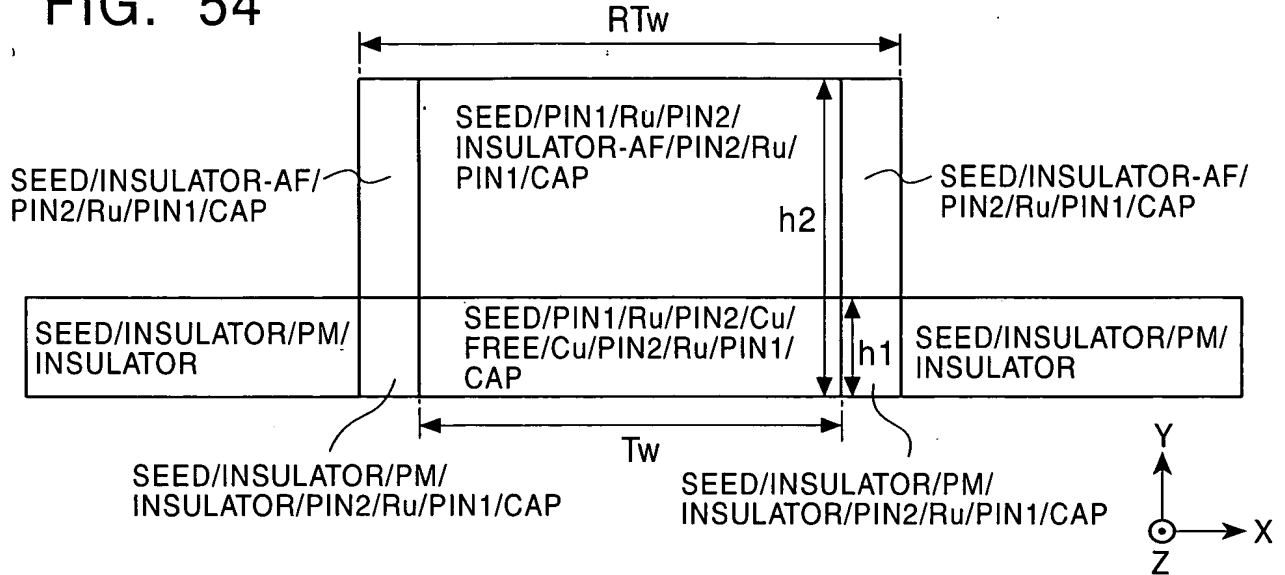


FIG. 55  
 PRIOR ART

